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ORIGINAL COMMUNICATIONS.

SOME OF THE ACCIDENTS FROM THE USE OF THE OBSTETRIC FORCEPS.

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Read before the San Francisco County Medical Society, November 13, 1900.

It is undeniable that, however well a man may be informed theoretically upon a given subject, he speaks best from the standpoint of recorded and systematized personal experience. I have sought, therefore, to present you to-night some of my experiences in the use of the obstetric forceps. Having selected this subject, I determined upon the tabulation of my cases of obstetrics since the beginning of practice. This has proved a more arduous task than I supposed, and has in addition been rendered somewhat discouraging from the discovery that the record slips of several hundred of my cases have been unaccountably lost. I have fairly complete reports of 250 of the first obstetric cases, and 287 of the last, but of the intervening 657 all data are lost except those of 50 cases, tabulated in a report to the State Medical Society, in 1890, and the fact of the confinement and the results as to the mothers in the others, and a few other data. All these have been my personal cases from the beginning, and none in hospital practice. In addition there have been a large number in consultation, which have afforded much experience in forceps' use. I may add that of my first 500 cases, 4 of the mothers died, but that since the last of these deaths I have 703 consecutive confinements without a death, notwithstanding a number of cases with convulsions, placenta praevia, post partum hemorrhage, adherent placenta, and among the earlier cases, septic infection and peritonitis. It is unnecessary, however, to pursue this part of the subject further in this connection.

In the first 250 cases were 21 of forceps delivery; in the last 287 cases there were 49 in which the forceps were used. While attending the 250 cases, I had also 16 confinements in consultation in which forceps were used; and during the period of the 287 cases, I had in consultation 21 forceps deliveries, or a total of 107 forceps deliveries. Besides these I have imperfect records of 70 other cases in private practice and 24 in consultation, or 201 forceps deliveries in all; and if my ratio of such cases was preserved during the occurrence of the intervening 657 deliveries, it would run the number up to considerably more than 200 forceps deliveries. But, of course, I can only draw upon 107 cases for my conclusions. The average has been about 13 for every 100 labors. Why should I have had but 21 forceps deliveries in 250 cases in early practice, and 49 in 287 cases in later experiences? This is explained at least in part by two circumstances. In the last series there was a large excess of primaparae, and a great advance in the social condition. In the first series there were 67 primaparae, with 14 forceps deliveries, and 183 multiparae, with 7 forceps deliveries. In the last series of cases there

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were 124 primaparae, with 38 forceps deliveries, and 163 multiparae, with 11 forceps deliveries. But again the average social condition was vastly different in the two series of cases. In the first there were 143 belonging to the laboring class, and 107 who had not been accustomed to muscular occupations; while in the last series there were only 50 of the former and 237 of the latter social class. It goes without saying that primaparae require the forceps much more frequently than multiparae, and that the well-developed muscular woman, accustomed to work, resists the exhausting strain of labor better than her more delicate sister. I hold, then, that the latter series does not show an undue increase in the use of the forceps. In my last 100 deliveries I have had 43 primaparae and 18 forceps deliveries, with only one death of the child during delivery, and that in a case of puerperal convulsions. Another child had been dead for some days, as the skin was discolored and the cuticle loosened.

Cases of Delivery in Private and Consultation Practise.

Private	Number	Primaparae	Multiparae	Laboring Class	Non-Laboring Class	Death of Mothers	Death of Children	Forceps Cases
1st Series	250	67	183	143	107	1	9	21
2d Series	657	?	?	?	?	3*	?	70†
Last Series	287	124	163	50	237	0	7	49
						4		140
Consultation								
With 1st Series	23	16	7	?	?	1	10	16
With 2d Series	78							24†
With Last Series	51							21
								341

* These all occurred in the first 250 cases of this series.

† All that my imperfect records show. There were undoubtedly more.

In my first 21 forceps cases I find the instruments were required once each for tumor of the sacrum, prolapse of cord, failure of the head to rotate, three times for delay from large child (9, 9, and 12¾ pounds), great exhaustion in one case where post partum hemorrhage occurred, protracted labor (30 hours to three days) in five cases, and inertia in nine cases. Two of the children were stillborn. Five of the children were in occipito-posterior positions. In the consultation cases the forceps were required for puerperal convulsions in two, for prolonged labor (three days) in two, for delay in the second stage (inertia) in five, for great exhaustion in one, face presentation in one, and by reason of haste and anxiety on the part of friends and physicians in five. The forceps had been applied by the attending physicians in the latter cases, and had slipped several times, causing much laceration and destroying at least three of the children. There were seven deaths of the children, one case having to be terminated by craniotomy. In my 49 recent cases 38 were primaparae and only 11 multiparae. The positions were, L. O. A., 32; R. O. A., 9; R. O. P., 4; L. O. P., 4. The causes were contracted pelvis with occipito-posterior positions in three; convulsions in four; large child, averaging nine pounds, in twelve; prolonged labor in two; occipito-posterior positions without rotation in three; great exhaustion of mother and child in one,—the mother's pulse falling to 40, and the child's to 90; a dead child in one; a dying child in one; and exhaustion and inertia in twenty-two. One of the children was dead a week or more before labor, as the head was flaccid, and the cuticle peeled off; two died during labor before the forceps were applied; one, cyanotic at birth, lived about nine hours; one, a 9¾-pounds child in L. O. P. position in a primapara in labor for three days, was lost, if not dead before, by including the loop of the cord between the forceps and its head; one was lost by dragging it through a deformed pelvis; one, in a case of convulsions, after twenty-six hours' labor, was lost by hasty delivery, the cord being short and around the neck. In the interest of the mother it is not probable that any of these children could have been saved. I find that the short forceps were used in three of these case simply to help the exhausted mother in her last efforts; that the Hodge were used in five cases, and the Eliot in thirty-five, the heads in twenty-five cases having rotated and being near or resting upon the perineum; while in eighteen cases they still remained in the oblique diameters. In six instances the Tarnier forceps were used, the heads being high. The duration of labor was over twenty hours (which is the average) in twenty-five cases, four being two days and more.

In a report to the State Medical Society at its session in 1890, referring to my belief that children average heavier in this state than on the eastern border or in Europe, I gave the average weight of fifty new-born children, in my recent experience, as 7⅜ pounds. The full-term children of the 287 confinements herein reported averaged 7.65 pounds, and of my last 100 cases, in which were 43 which weighed 8 pounds and over, the average was 7.75 pounds. This circumstance has an important bearing on the question of forceps' use. One hundred and ten children of primaparae at term averaged 7.44 pounds; while 143 multiparae averaged 7.81 pounds, an excess of 0.35 pounds in favor of the latter. And again the children of 26 primaparae averaged 7.47 pounds, while the second children of these same primaparae averaged 8.27 pounds, or an increase of over ¾ pound. The children of the 49 forceps cases, leaving out two which were premature, averaged for the males 8.21 pounds, and for the females 7.44 pounds, or exactly 8 pounds for both sexes together, which is a third of a pound higher than the average for all the children of the series.

In the State Society paper already referred to, I presented a table, showing the cause of death of the fetus in 500 cases of labor, 34 being in consultation. I enlarge this table with more recent experiences. It now includes the deaths of the children in 159 instrumental deliveries, of which 106 were in my private practice, and 53 in consultation, with causes so far as ascertained.

Forceps Cases—Deaths of Children.

	My own cases	Consultation cases	Total
Dead and macerated	1		1
Deformed pelvis, dead before forceps used	1		1
Dead before forceps applied	1		1
Feeble child, cyanotic, died shortly	1		1
Convulsions in mother	2	3	5
Deformed pelvis	1	1	2
Excessive use of ergot		1	1
Retention of shoulders		1	1
Brow presentation		1	1
Occiput posterior positions	2	1	3
Cord compressed by forceps	1	2	3
Injured by slipping of forceps before I was called		3	3
Probably injured by forceps, or cord compressed	2	9	11
Total deaths in forceps use	12	22	34
Forceps cases	106	53	159
Deaths probably from forceps, wholly or in part	6	15	21

It must be remembered, however, that the consultation cases were more serious on the average than my own. In all of them the head was high up and not rotated, while in my last series in more than half the cases the head had rotated into the conjugate.

I have, therefore, had 12 deaths of the child in 106 private forceps cases. Four of these occurred before the forceps were applied, hence in but 8 is it possible to attribute the death to the forceps. But labor could not have been terminated without the instruments; therefore, it is not entirely proper to censure them for the result. In consultation cases the termination was much more unfortunate. The forceps seem in part to have been responsible for 15 deaths in 53 cases. It must be remembered, however, that the consultation cases were more serious on the average than my own. In all of them the head was high up and not rotated, while in my last series, in more than half the cases the head had rotated into the conjugate. In several cases serious injury had been done by attempts at delivery before I was called.

This seems a rather long introductory, and may prove longer than that which is to follow, but it is in great part germane to my subject, and will serve me as an illustration for several points.

With ordinary care serious injury to the mother from forceps use is not likely to occur. I have never known a death to take place, nor anything more than laceration of the soft parts. In these days of aseptic methods, death should not occur, but the injury to the parts may lead to important disabilities. The perineum may be extensively lacerated even through the sphincter, which is more likely to occur in occipito-posterior positions, when rotation anteriorly has failed to take place. Nevertheless, when carefully managed, the forceps may be made efficient to prevent laceration. I have no worse results with them than without them, and often have no laceration at all. When serious rupture is threatened, I find a resort to episiotomy or rather division of the larger lips, a most satisfactory procedure. It gives straight incised wounds, which are easily sutured, instead of jagged and uncertain tears, which often extend into the vagina, and are not easy to reach. It is possible for a fold of the bladder to be bruised against the symphysis pubis, and a slough and fistula to follow, although gynecologists assert that such an accident is much more apt to follow long delay in labor. Fistula is far more rare since the more frequent use of the forceps. I have never seen a case. But there is an injury that is not infrequently done by the instruments. It is laceration of the neck of the uterus by attempting to extract the head before full dilatation of the cervix. This matter of determining the dilatation of the cervix is deceptive. The examination should always be made during a pain: otherwise the cervix is often so flaccid as to leave the impression that it is completely dilated when it is far from being so. If the patient's strength is good and there are not other contraindications, the forceps should never be applied until dilatation is complete, especially if the head is high up. There is another possible injury that may be readily overlooked. It is bruising of the tissues covering the inner surface of the pubic arch by the jamming of the head and forceps against it. This occurs when the head is still in the oblique diameter and pretty well up, so that the handles of the ordinary forceps can not be depressed sufficiently to ensure traction in the direction of the axis. The remedy is a very simple one; that is to use an axis traction forceps. The books tell us that the injudicious use of the forceps may cause separation of the pubic bones at the symphysis, but I apprehend that this accident can not occur except in those rare cases of great relaxation which prevent locomotion. I have had a few cases of the latter, but none in which forceps were used. Indeed the condition would be favorable to delivery without the forceps.

The danger to the child is far

more serious than to the mother, as our statistics show. Minor injuries are not infrequent, and are of little importance: such as temporary facial paralysis from pressure of the forceps upon the facial nerve below the ear; abrasions and bruising of the face, neck, and scalp; injury to the eyelids, with following conjunctivitis; rupture of the vessels of the scalp, causing hematomata, etc. If the forceps are not adjusted to the sides of the head in the occipito-mental diameter, but are applied obliquely, and much force is used in extracting, there may be very much distortion, with possible fracture of the bones, rupture of vessels in the brain, or laceration of the brain itself. Injuries not apparent at once may result in inflammation later. The skull is so constituted as to permit overlapping of its parietal and frontal bones and diminution of its bi-parietal diameter by a quarter or even half an inch without serious injury, but the pressure must be evenly applied and mainly laterally, and the process must proceed slowly. This constitutes what is called moulding. It produces the temporary dolichocephalous head, long and narrow, by shortening the bi-parietal and trachelobregmatic diameters and lengthening the occipito-frontal and occipito-mental diameters, which shortly after birth return to their normal dimensions. If labor be unduly hastened we fail to take advantage of this beneficent provision of nature. It is no doubt more scientific to apply the forceps in the occipito-mental diameter of the child, and this can always be done when the head has rotated to the conjugate diameter of the pelvis and often when it is yet in the oblique diameter; but in some cases the operation is difficult or impossible of accomplishment, and then one blade will apply itself in front of the ear and the other behind the ear on the opposite side. The point of this latter blade will frequently project down upon the neck, especially in an occipito-posterior position. In high operations this is almost necessarily the mode of application of the forceps. Now, if the cord be about the neck of the child, which is very often the case, it is almost sure to be compressed, the circulation to the placenta cut off, and the child destroyed. I am certain that this is much more frequently a cause of death from forceps' use than we have been led to believe. My attention was first called to it from finding a loop of cord between the forceps blade and head in an occipito-posterior case, which had been in labor two days and required relief. I have known it to occur in several cases since. The worst feature is that even knowing the danger it is almost impossible to avoid it, since it is quite impossible to push the hand in in advance of the blade to direct its point. The only precaution that I know of is to listen repeatedly to the fetal heartbeat after applying the instruments, and note if it continues in good force or otherwise. If otherwise, the forceps should be removed. The Tarnier blade is less likely to include the cord.

The conditions of election for the forceps are complete dilation of the cervix; sufficient time for moulding of the head, that it may more easily pass through the pelvis; completion of the long rotation in occiput or chin posterior positions; and rotation of the head into the conjugate diameter of the pelvis. When these conspire the forceps in competent hands have almost no danger for the child; and the danger should not be much even with the tyro, if he has some experience in the use of tools, and is a man of good judgment. But as we recede from these conditions the risk to the child becomes greater and greater. When the head is still in the oblique diameter and not high up, the risk is not greatly increased, provided the instruments are applied to the sides of the head and in its occipito-mental diameter, with the occiput to the heel of the blades. The difficulties of application have, however, increased, and not even an expert can always get them in exact position. If not exactly applied or if applied according to some teaching in the transverse diameter of the pelvis without reference to the head, they grasp the head more or less obliquely, and if much force be required to effect delivery, may distort the head, cut the scalp, even break the skull, or more probably contuse the brain or rupture a blood-vessel within. Besides, the extremity of a blade is apt to extend down upon the neck, and may include the cord, when it is around the neck, as has already been observed. Again, the blades are more likely to slip, and, suddenly losing their hold, pass rapidly through the vagina, and tear the perineum. But the forceps should never slip in this way. There is no excuse for such an accident. I have never had it occur to me. If the instruments are accurately applied, or even somewhat obliquely, and the index of the hand that clasps the lock be extended to touch the presenting part, the operator at once appreciates when slipping begins, and can avoid it. To be forewarned is to be forearmed. All the risks to the child, just mentioned, are increased the higher the head is in the pelvis, with the added danger resulting from the impossibility, with the ordinary forceps, of making traction in the direction of the axis of that part of the pelvis in which the head rests, and of being required to apply extra force, since much is lost by the necessary dragging of the head against the pubic arch instead of under it. The Tarnier forceps are far better suited to such cases, but they are more difficult of application. When the head is at the brim the dangers are supreme. None but an axis traction forceps should be used in such cases.

Now, I have said that one of the conditions of election is that the cervix be fully dilated. One authority has insisted that the forceps should never be applied otherwise. This is too rigorous a dictum. In profound exhaustion with the pulse permanently 120 or more, in puerperal convulsions, in cases of hemorrhage, concealed or inevitable, when the head has remained for some time fixed in the pelvic cavity, and in some cases of inertia we must apply them in the interests of the mother. But when these conditions are not present, and the mother's strength is good—her pulse not rising above 90 or 100 in the intervals between the pains—we should wait. It should be borne in mind that the duration of normal labor in primaparae averages twenty hours, ond often extends into the second or even the third day without serious inconvenience or harm. But there is still another reason why we should not deliver with undue haste. Nature is wonderfully conservative, and many a case that it seemed impossible to terminate without aid, has, within an hour or so of such decision, made spontaneous changes that soon ended in delivery. It seems to me that we lose sight of the great importance of the moulding of the head already mentioned. Some hours should be given to this, when the head is in the brim or in the oblique diameters, and especially if the occiput be posterior. When heads are large, as we frequently find them in San Francisco, it is the wisest course to let the moulding process proceed to the fullest extent, short of exhaustion of the patient. In my experience the left occipito-posterior position is considerably more frequent than many authorities admit. I have a number of demonstrated cases among my records. The risk of applying the forceps in these cases, before rotation, is very great. In some I have seen rotation spontaneously occurring after hours of delay. In some I have succeeded in rotating the occiput forward with the forceps, and in others I have been obliged to apply the forceps before rotation, turning the occiput into the cavity, and sometimes with disastrous results to the child. In these cases, also, it is of first importance that the physician should be able to make a correct diagnosis of the position, in order that he may understand the cause of the delay, and be content to wait longer, or, if the forceps must be applied, know how to apply them to the best advantage. In too many of the cases the early application of the forceps complicates and masks them for future examination. When the head remains in an oblique diameter for several hours, notwithstanding strong expulsion pains, it sometimes becomes advisable to assist it over its difficulty by traction with the forceps whereupon it will come down easily and rapidly toward the perineum. Then the forceps may be removed, and the unaided forces will often succeed in effecting the delivery.

Occasionally I have felt assured that the delay in the advance of the head was due to the shoulders, which either had not yet sufficiently rotated or were held back by the cervix, contracting somewhat about the neck of the child. Under such circumstances, when the head is well down and rotated into the conjugate and while considerable traction force is yet required, suddenly resistance gives way with a distinct sensation communicated to the hands, as of the child's shoulders slipping past an obstacle.

Possibly, in view of my admission of 18 forceps deliveries in 100 consecutive labors, my assertion that I am inclined to be conservative in the use of these instruments, will not be credited. I am conservative at least in regard to the mother's strength, and my good record in that direction will be my justification. There have been some cases in which I have regretted not having used them earlier. I hear of physicians who resort to them much more frequently than here stated.

Perhaps I can not close these remarks better than by reading the following extract from a paper by Dr. Thomas Addis Emmet, in a recent number of the American Gynecological and Obstetrical Journal: "At a meeting of this Society (American Gynecological Society) in 1878, many of you will recall the reading of a paper on vesicovaginal fistula. In it I then pointed out that this injury, when from a slough, was the result of delay in delivery, and never from instrumental delivery, and I also proved that where ergot had been employed, the extent of damage in labor was greatly increased. The older members of the Society recall the general sentiment existing in the profession at that time against what was termed 'Meddlesome Midwifery,' and they also know how frequently the use of ergot was resorted to for the purpose of terminating tedious labors in preference to the application of the forceps. Few realize that since the publication of that paper a revolution, as a direct consequence, has taken place throughout the world in the practice of obstetrics. The practitioner who now fails to deliver as soon as possible after the head ceases to recede on the subsidence of a pain, would be judged derelict in his duty, and ergot to hasten delivery has gone out of respectable use. Vesico-vaginal fistula, from having been a common result of child-bearing, is now rarely found, and where of necessity a special ward of forty beds was kept always full formerly in the Woman's Hospital, to accommodate cases from every portion of the world, I now often do not see a case there in an interval of several years. During the past year, as an unusual circumstance, I have had two in my service."

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ANEMIA IN ITS RELATION TO SURGERY.

By H. Kugeler, M. D.

Read before the San Francisco County Medical Society, December, 1900.

When the chairman of the Executive Committee informed me that he intended arranging a symposium on anemia, and requested me to take the surgical aspect of the subject, I was rather at a loss as to the manner of approaching it. The more I studied the question, however, the more it dawned upon me that there were numerous weighty problems connected therewith that might well repay serious study. At the start an apparently insurmountable obstacle presented itself. Not being connected with a large hospital nor disposing of a staff of enthusiastic assistants, how was I to carry out any extended series of experiments or investigations? My only recourse was to the work of others, but lo! a reference to medical literature showed a most alarming absence of any works bearing on the subject. A careful scrutiny of the *Index Medicus* for over ten years revealed one article on "Anemia in Its Relation to Medicine and Surgery," and that was published some years ago in a homeopathic journal. The articles on anemia refer almost entirely to pernicious anemia; rarely one is found on splenic, lymphatic, or myelogenic leukemia; and a few on the "Effects on the Brain and Spinal Cord of Experimental Anemia." After consulting about a dozen textbooks, I finally found an excellent article in the "International Text-book of Surgery," entitled "Surgical Pathology of the Blood," by Richard C. Cabot, M. D., of the Massachusetts General Hospital, Boston. In some very recent journals there were articles germane to the subject.

Anemia presents itself to the consideration of the surgeon in three ways: (1) Acute anemia; (a) produced by the surgeon during operations from loss of blood and the destruction of red corpuscles by chloroform and ether; and (b) that following accidents. (2) The secondary anemias of surgical diseases, suppuration, carcinoma, tuberculosis. (3) The primary anemias, pernicious anemia, leukemia, etc., in so far as they complicate surgical disorders or come into question in differential diagnosis. According to Mikulicz, the examination of the blood throws so much light upon the condition of surgical patients as to make it a useful rule that every patient's hemoglobin shall be tested once a week, partly to watch the progress of the case, and partly to ascertain whether it is advisable to operate upon patients already very anemic. Mikulicz finds that the length of time needed for full restoration of the blood to normal depends on: (a) The amount of blood; (b) the age and nutrition of the patient;

the extremes of life bear hemorrhage badly; (c) the existence of other diseases, cancer, tubercle, typhoid; (d) treatment. Other conditions being favorable, he finds that a loss of the blood mass under 1 per cent is made up within 2 to 5 days; a loss from 1 to 3 per cent is made up within 5 to 14 days; a loss from 3 to 4 per cent is made up within 14 to 30 days. In few surgical operations there is a loss of over 3 per cent, and accordingly in a normal adult under favorable conditions, we expect the blood to be normal within two weeks. Bierfreund noticed that after operations for malignant disease the blood does not begin to be regenerated until considerably later than after other operations, a week later on the average, and that it never reached as high a point as it had before operation. This, in spite of the fact that some patients showed decided improvement in weight and general condition. Mikulicz makes it a rule never to operate on a patient whose hemoglobin is under 30 per cent. This gives him a standard up to which patients must be brought by rest and treatment, before he will subject them to further loss of blood. It would probably be well to adopt some such rule in accident cases, where much blood has been lost. In the shock of accident cases, it is important to determine whether it is due to anemia from loss of blood or of nervous origin; for in the former transfusion is indicated, while in cerebral concussion it will probably do harm. A considerable diminution of the red blood corpuscles would indicate shock from hemorrhage, and might even enable us to gauge the amount. It must be remembered, however, that immediately after hemorrhage the count may be normal, since only the amount, and not the quality, is affected. Within a few hours, however, fluid is absorbed from the tissues, and the amount of anemia is indicated by blood count. In the same way internal hemorrhage in an obstetric case, extra-uterine pregnancy, ruptured aneurism, laceration of the spleen, liver, etc., can be diagnosed.

Coming now to the secondary anemias of surgical diseases, we must consider, first of all, suppuration and abscess, and this brings us face to face with a question that has received considerable attention of late, leucocytosis in suppuration. Almost all acute and subacute suppurative processes in any part of the body manifest themselves in the peripheral blood by an increase in the number of the polymorphonuclear leucocytes. The following points must be borne in mind: (1) The degree of leucocytosis is independent of the amount of pus. (2) An increasing leucocytosis points to a spreading process, and may be the only evidence of it; hence in serious cases the necessity of daily counts, and the advisability of leucocytosis charts. (3) Occasionally leucocytosis is absent despite the presence of pus. It happens (a) where the bacteria in the pus have died; (b) where the pus is very thoroughly walled off; (c) in fulminating cases where the patient succumbs without offering any considerable resistance to the action of the infection. (4) Where drainage is established and free exit given to pus, leucocytosis drops. If the granulation tissue is disturbed by curetting, probing, or even by the removal of stitches, there will be a rise, also, if there is a pocketing of pus. (5) The greatest degree of leucocytosis occurs in the most violent infections, if well resisted by the system. (6) Leucocytosis is of especial value in deep-seated suppuration, osteomyelitis, hepatic, and perinephritic abscesses, purulent accumulations in a cerebral sinus, following middle ear disease, in the differentiation between suppurative and non-suppurative diseases in the female pelvis, in appendicitis as against typhoid, etc.

In pyemia and septicemia following wound infection or puerperal cases, the bacteriological examination of a syringeful of blood, taken from a vein at the bend of the elbow, may give some information as to the diagnosis, prognosis, and treatment. Not all cases, even of the severest type, show any bacteria in the blood. The presence of the streptococcus or staphylococcus aureus is almost always equivalent to a fatal prognosis; in the case of the former the anti-streptococci serum might be indicated. Pure tubercular infections, uncomplicated by pyogenic organisms, do not affect the blood to any extent except tubercular meningitis, which may or may not induce leucocytosis. In hip or spinal tuberculosis an increasing leucocytosis means neither abscess formation nor an increased activity of the tubercular process. In tubercular peritonitis there is a normal blood count as distinguished from other forms. The differential diagnosis between malignant disease on the one hand and tuberculosis or abscess on the other, is sometimes greatly assisted by the examination of the blood. The presence of marked deformities in the red cells, or, if nucleated red cells, favors malignant disease. These conditions are only occasionally found in the severest forms of sepsis or tuberculosis, and then always associated with great anemia. The leucocytes in the majority of cases of early cancer are not increased in number, except occasionally in extensive and rapidly-spreading growths. Between cancer and abscess, the leucocytes do not help much, except that if there is no increase, it is probably no abscess. An additional aid is the fact that fibrin is usually increased in abscess and not in cancer. Sarcoma is much more frequently accompanied by leucocytosis than cancer. Concerning the effect of the primary anemias on intercurrent surgical disorders, little positive information is obtainable. Certain general platitudes expressed by eminent authorities, based simply on their assumption of probabilities, have been religiously copied by subsequent writers, until they have gained authority by frequent repetition. But the day of philosophic medicine has passed, and the subject is still open for investigation and the presentation of data and facts.

In a diagnostic way they are, however, of considerable importance; leukemic livers, spleens, and lymph nodes have been cut down upon repeatedly. The diagnosis of leukemia can be made with absolute certainty by the blood examination alone, and here the leucocytosis plays an important role in surgical diagnosis; the differentiation of the two is imperative. The distinction is not in the number of leucocytes nor the duration of the increase, but in the kind of leucocyte increased. In leucocytosis only the polynuclear forms are increased; in leukemia it is the lymphocytes or melocytes that make up the bulk of the increase. This distinction is not apparent on the ordinary counting slides, but requires a stained preparation. The primary anemias have hitherto been relegated to the province of the physician, along with all obscure disorders; but it seems that here also the rude hand of the surgeon is taking hold to shake up preconceived notions of pathology and treatment, just as he has done with exophthalmic goitre and appendicitis. To quote from an editorial in the *Journal of the American Med-*

ical Association, October 27, 1900: "The affection variously described as splenic anemia, Banti's disease, or splenic pseudoleukemia, is characterized by a considerable enlargement of the spleen, the changes being essentially of a chronic, interstitial character. That this disease is intimately connected with splenic lesions would seem to be demonstrated by the cures reported by Italian physicians to follow splenectomy." The article then continues by describing two cases published by Bovaird, in the *American Journal of Medical Sciences*, October, 1900, with symptoms like those in the former disease, but with an entirely different pathology,—a primary endothelial hyperplasia of the spleen. No doubt when these conditions are more thoroughly studied they will afford another field for the surgeon.

Pernicious anemia concerns the surgeon especially in the differential diagnosis from cancer of the stomach. An interesting article appeared in the *New York Medical Journal*, May 19, 1900, entitled "A Study of the Blood in the Diagnosis of Carcinoma of the Stomach from Pernicious Anemia," by Wm. Osler and McCrae. Dr. F. P. Henry, in the *Archiv fur Verdanungs, Krankheiten Band IV*, has called attention to the value of such study. He has never seen a case of stomach cancer with a number of red blood corpuscles below 1,500,000 to the mm., nor a case of pernicious anemia coming to a fatal issue without falling below 1,000,000. In carcinoma of the stomach the diminution of red corpuscles does not keep pace with the cachexia, while in pernicious anemia the cachexia holds no pace with the oligocythemia. Osler and McCrae found in the cancer cases some poikilocytosis, also nucleated red corpuscles, but no megaloblasts. Percentage of hemoglobin, low; in one-third to one-half of the cases there was an increased leucocytosis, but neither ulceration nor the presence of metastasis appeared to have any direct bearing on the leucocytosis.

The treatment of anemia belongs to the domain of medicine, except, perhaps, the aforementioned treatment by extirpation of the spleen. In the acute anemias, however, we have a very efficacious form of treatment, the introduction of physiological salt solution to replace the lost blood. Three methods are in use: the rectal injections of hot saline solution, subcutaneous transfusion, and direct intravenous injection. All three methods are efficacious, the first being especially praised in abdominal surgery, some men going so far as to claim that it prevents intestinal adhesions. The transfusion under the breast acts slowly, and a number of my patients have complained of severe pain in the breast for some considerable time subsequently to the introduction, in one case after five months. The intravenous transfusion is ordinarily easy and safe, and its action is rapid and marked, hence decidedly to be preferred in all cases requiring prompt action.

813 Sutter Street.

PLAGUE IN SAN FRANCISCO.

Cases 19, 20, 21 and 22.

By W. H. Kellogg, M. D., Bacteriologist to Board of Health.

Case 19.—Moon Li Chee Yung, age 30, Mongolian, female, resided at 802 Dupont, died October 31. A bubo was found in the left femoral region. An incision showed a necrotic lymph-node about the size of a walnut, the surrounding tissue being infiltrated with a bloody fluid. Smears from the gland substance showed plague bacillus. The diagnosis was confirmed by inoculating a guinea-pig, from which pure cultures of the germ were obtained. Pure cultures were also obtained direct from the gland.

Smears from the gland substance showed the plague bacillus, the identity of which was confirmed by inoculation of a guinea-pig. A pure culture was also obtained direct from the gland. The guinea-pig died in four days, and at autopsy presented the following appearances: No necrosis at site of inoculation, but a great amount of bloody edema and subcutaneous hemorrhage. Enlargement of the lymph-nodes in both groins. Pneumonia of both lungs. Considerable bloody mucilaginous fluid in both pleura and peritoneum. Spleen about three times normal size, with a few whitish spots on its surface. Smears from the spleen and blood showed the typical bipolar staining bacilli in great numbers.

Case 20.—Yung Wah Noui, a Mongolian, female, age 9, resided and died at 802 Dupont, a daughter of the preceding case, and died twenty-four hours after her mother, after displaying similar symptoms. The autopsy was held twenty-four hours after death. Decomposition was well advanced; there was no enlargement of the superficial lymph-nodes. Smears of sputum stained showed the presence of a bipolar staining bacillus. The entire left and the lower lobe of the right lung involved in a bronchopneumonia. The pericardium contained a bloody fluid, the heart muscle was soft, and the ventricles filled with blood-clots. The spleen was enlarged, very soft, and its structure partially broken down. The peritoneum over the small intestines was congested. There were submucous hemorrhages throughout the small intestines. The vessels of the mesentery were injected. The mesenteric lymph-nodes were soft and very dark in color. No ulceration in the intestines. Smears of the spleen, lung, and mesenteric glands showed the plague bacillus. A guinea-pig was inoculated and died four days after, displaying typical plague lesions. An area of coagulation necrosis one and one-half by two inches surrounded the point of inoculation. There was marked subcutaneous edema and hemorrhages, and the spleen was about ten times normal size, and covered with small whitish spots. The spleen and blood contained the plague bacilli in myriads.

A Chinese school-teacher died in these same rooms on September 12, of this year, supposedly of pneumonia. He was taken sick suddenly, had a severe chill, high fever, and died in four or five days.

Case 21.—A female nurse, 28 years of age, entered a hospital in the city on October 31, 1900, with a history of exposure to diphtheria, having nursed a case from 7 P.M. October 21 till 1 A.M. October 22. This case, Samuel Fluth, aged 19, said to have come from San Jose, had been treated for typhoid fever by his physician for about a week, when, after a consultation with another physician, a diagnosis of nasal diphtheria was made, and a death certificate to that effect sent to the Health Office on the death of the man, which occurred six hours later. The girl complained of severe pains all over the body, especially in the abdomen. Temperature 40 C., pulse 104, respirations 33. There were no throat symptoms at any time. An injection supposedly diphtheria antitoxin, had been administered in the left forearm by Dr. E. R. Wisner. The patient refused to say where she had been in the interval after leaving her last patient before entering the hospital. The case was immediately placed in the contagious building. The following day the pain continued, accompanied by tympanites, and turpentine stupes were applied. Toward evening the condition was improved, the temperature falling to 37.4, and abdominal pain and tympanites lessening. A cellulitis was now seen developing on the inner side of the left arm near the axilla, but no swelling of the axillary glands. The following day, November 2, the arm became very painful, and the temperature rose to 38.5 at 7 P. M. At 2 A. M. November 3 there was some weakening of the pulse, and stimulants were given, and the condition improved. At 3:30 A. M. she passed urine containing blood, and spat blood-tinged mucus. Hemorrhagic petechiae appeared around elbows and ankles, temperature dropped 36.6, pulse grew weaker, and death occurred at 4 A. M.

Autopsy Report.—External appearance: Subject a well-developed young female. Rigor mortis marked. Cadaveric lividity on dependent aspect, especially marked about head and neck. Purplish red spots, not raised from the surface, about both ankles, both knees and both elbows. Inguinal glands slightly but not markedly enlarged. Axillary and cervical glands not enlarged. No noticeable change in left forearm where antitoxin was injected.

Abdominal inspection: Muscles and subcutaneous tissues firm, well developed. Peritoneum markedly injected over entire extent, especially about cecum. About three ounces of free, non-clotted blood at bottom of pelvis. Stomach considerably dilated and displaced downward, lower border two and one-half inches below umbilicus. Other organs in normal positions. A few enlarged glands in mesentery, size of a bean. Appendix free from adhesions.

Thorax inspection: Pericardium filled with straw-colored fluid. Lungs free. No fluid in pleural cavities.

Examination of organs: Spleen was enlarged, deep purple color, extremely soft and friable; on section minute glistening points, size of pin-points, scattered throughout—cultures and cover slips taken. Stomach was dilated and displaced downward; contained yellowish curdy fluid; mucosa covered with purplish spots size of a pea. Left kidney was about normal size; capsules strip readily; on section considerable fluid-blood oozes from surface; cortex injected; substance soft—cultures and covers taken. Right kidney was similar. Liver was normal size, fatty. Gall-bladder's peritoneal surface covered with purplish blotches, irregular in shape—subperitoneal hemorrhages. Small intestine had scattered throughout its length, small whitish-gray elevations similar to tubercles; here and there are purple spots—submucous hemorrhages—most marked and in greater number in the lymphoid follicles. Large intestine: The caput coli is thickened, grayish color; its surface covered with innumerable whitish-gray elevations similar to those in small intestines, but more numerous; besides there are submucous ecchymotic spots. Appendix was free from adhesions; vessels injected; sub-mucous coat infiltrated with blood. Mesenteric glands showed a chain of five enlarged to size of a bean; soft; no hemorrhages inside—cultures taken. Fallopian tubes were congested and purplish in color; these extend over posterior surface of uterus. Left ovary contains a Graafian follicle on point of rupture. Uterus normal size. Either cornu contains a soft reddish material—cultures taken. Heart enlarged, muscles rather soft; right auricle greatly dilated, filled with clotted blood; all the cavities are filled with soft red clots; mitral valve thickened; aorta contracted; aortic valve slightly thickened and opaque; tricuspid and pulmonary valves normal; the endocardium of right auricle is dull, lusterless, and has a pinkish-red color, looks as if covered with a red scum; this appearance noted in all the cavities, not so marked as in right auricle—cultures and slides taken. At root of left lung about a half dozen whitish spots size of grain of sand, look similar to tubercles; lungs otherwise normal.

Pathological Diagnosis.—Septicemia, with tendency toward minute hemorrhages in tissues; cause probably B. pestis. Septic spleen, fatty liver, gastroptosis and sub-mucous hemorrhages in stomach, septic enteritis and colitis, acute septic nephritis, hypertrophy of heart, chronic mitral—thickening—regurgitation, hemorrhage necrosis of endocardium.

Bacteriologic Examination. — The blood was found full of plague bacilli. There were enormous numbers of them in the spleen; they were obtained in pure culture from the spleen. Guinea-pigs inoculated with spleen tissue died within thirty-six hours of typical plague septicemia. The spleen and peritoneal cavity contained an exudate full of the bacilli. The body of Samuel Fluth, the young man attended by this nurse, was exhumed and examined by the city bacteriologist, Doctor Kellogg. The body was found very much swollen, indicating rapid decomposition; pieces of tissue were taken for examination.

Case 22.—On December 6 Dr. D. A. Hodghead reported to the Health Office that he had been in attendance on a case suspected to be plague, at 844 Washington Street. I saw the case at 4:30 P. M. of the same day, with Doctors Morrissey and Pratt, and found the patient, Lee Ho, in a comatose condition, pulse 146, and very weak. The temperature was not taken, but the man's body was very warm to the touch, while the extremities were cool and cyanotic. Physical examination of the body revealed nothing abnormal. No petechiae in skin. There was a very large and tender bubo in the left femoral region. Blood would not flow from the ear, but the bloody fluid secured by aspiration of the bubo showed numerous plague bacilli. The people in the house could give no intelligent account of his illness, but said that he had been sick only six days. The patient died the next morning at 10 a. m., and I performed an autopsy in the afternoon, the following named gentlemen being present: Doctors Ryfkogel, Kinyoun, Wilson, Morton, Brown.

Autopsy Lee Ho, age 36: Subject, a well-developed, well-nourished, medium-sized male. Heart and lungs normal, right lung bound down by extensive adhesions. About 15 cc. blood-tinged serum in the pericardium, and about 60 cc. in each pleura. Liver, fatty. Spleen about twice normal size, dark red, soft, cut section showing whitish specks scattered over surface. Kidneys normal size, capsule strips easily; dark in color; considerable fluid blood exudes from cut surface. Mesenteric glands slightly enlarged. Small intestines contain a few sub-mucous hemorrhages. The plague bacilli were more numerous in the heart's blood than in either the spleen or lymph-nodes of the bubo. A cut section of the latter was dark, purplish, and had a mottled nutmeg appearance, but the bacilli in the gland substance, contrary to the usual rule, were very few in number. It would look, therefore, as if the affection of the gland was secondary to a true septicemia. Indeed, I think it is more often the case that the involvement of the glands producing a bubo is secondary than that the primary focus is in the bubo, as is generally supposed to be the case. If the buboes were the primary focus of infection, and were caused by the introduction of the organisms to the tributary lymphatics through a skin abrasion, we would have a wider distribution of the bubos than we have. The femoral group would not be affected almost exclusively, as is the case, but the axillary glands would be swollen quite as often. The diagnosis in the case of Lee Ho has been fully confirmed by inoculating animals with a pure culture obtained from his blood the day before he died. The guinea-pig died in three days with typical plague lesions, and the organism was obtained in pure culture from its spleen.

ASPHYXIA NEONATORUM.

By Wm. Himmelsbach, M. D.

Read before the San Francisco County Medical Society, October, 1900.

Before detailing two cases of asphyxia neonatorum, I would beg your indulgence in a few general remarks pertaining to the subject. According to Dr. Bissell, suspended animation may be due: (1) To impairment of the umbilical circulation, occasioned by pressure on the cord, or entanglement of the cord upon itself or around the child. (2) To the loss of blood resulting from placenta praevia, or partial or complete separation of the placenta before birth of the child. (3) To shock following injuries received during labor from instrumental interference or traction on body in breech presentations, as here an injury to the medulla often results, under which circumstances resuscitation is impossible as death must instantaneously follow.

The two stages are commonly known as the "anemic" and the "apoplectic," or "asphyxia pallida and livida" respectively. According to the text-books, the anemic form may be caused by insufficient nourishment, torsion, prolapse or compression of the cord, diseases of the placenta, disturbance of placental circulation, feeble development, congenital disease and malformation of the infant, premature labor, excessive high temperature or poisoning of the mother by morphine or chloral. The apoplectic form is usually the result of a tedious labor, especially a prolonged second stage after too early discharge of the liquor amnii, continuous uterine contraction induced by ergot, breech presentations, and compression by the forceps. In the anemic form there is insufficient blood supply; in the apoplectic form there are local congestion and general venous stasis. In the apoplectic form, which is occasioned by direct interference with the umbilical circulation, there exists not only a superficial venous congestion, but also general stagnation in the circulatory system and diminished supply of maternal or placental blood. In the anemic form, when due alone to the loss of blood, there exists a depletion of the circulatory system as well as deficiency in maternal blood supply. When due alone to shock from injury, the maternal blood supply is also affected, it being lessened because of the enfeebled heart action of the child.

Prognosis usually unfavorable, as, even after apparently good results in a number of cases, the infant in a few days gets cyanotic, heart action feeble, having only been temporarily resuscitated, to die in the end of atelectasis. Less favorable, when uterine respiration has taken place, and still less so, when aspiration of liquid and foreign material has taken place. Still every resource must be exhausted, as even apparently hopeless cases have been restored and preserved to life.

The following history is gleaned from a paper of Doctor Bissell, read before the Obstetric Section of the New York Academy of Medicine, May 25, 1895. In 1543 Vesalius published his experiments, which demonstrated the effect produced upon the heart when the lungs of animals were inflated by air. In 1664 Robert Hook introduced artificial respiration, the principle of which has ever since been the recognized means of reviving where suspended animation exists; but to Marshall Hall we are indebted for having made the first advances in the study of the nature and cause of asphyxia, one of the forms of suspended animation, and for having established a procedure for inducing artificial respiration, superior to any previously suggested. In 1824 Dewees advised placing the child's mouth downward, and holding the body and the hips higher than the head, and renewing the inflation alternately. He further stated: "Owing to the tenacity of fluid within the windpipe, we can not at first force air into the lungs, but by a little perseverance we overcome the obstacles and the mucus becomes so thin as to flow readily from the mouth, and at once relieve the child." In 1883 Professor Simpson, of Edinburg, taught "to first hold the infant by the heels to allow any fluid to run out of the air passages, and then perform artificial respiration by Schultze's method." The danger of blowing into the lungs was that the lungs might be injured by forcible distension. Dewees also advocated suspension by the feet. The value of inversion *per se*, as a direct means of resuscitation, was first advanced by Nealaton. Doctor Chisolm states that the way in which resuscitation is accomplished by suspension under these circumstances, is: "It is a mooted point whether resuscitation is brought about by an additional supply of blood to the anemic brain alone, or by the emptying of the blood from the great reservoir, the liver, through the vena cava, into the cavities of the heart, stimulating them into renewed activity." In an article published Feb. 24, 1894, Doctor Morrison describes the condition as a disease of the circulatory and not of the respiratory system. John MacKenzie, however, in the *Lancet*, Oct. 23, 1897, gives a case of asphyxia neonatorum, in which the heart continued to beat for more than four hours, without the respiratory functions having acted. The woman, aged forty, occipito posterior position, was delivered by forceps. When child was born, cord was around neck, face livid, lips blue, heart beating feebly, respiration absent, and there was no pulsation in the cord. In the hope of relieving stasis in the fetal channels, cord was cut and left unligated, but no blood escaped. Considering this a grave sign, and to guard the possibility of mistaking any adventitious sounds for the heart sounds, he carefully auscultated and found the latter quite clear. He began artificial respiration, hot and cold douches, and, remembering, also, Victor Horsley's advice in case of arrested respiration from cerebral pressure, applied hot fomentations to the head, and at the same time continued artificial respiration. For fully two hours he persevered with ordinary treatment, and still there was not the faintest sign of respiration. Loath to give up the struggle, the child was placed in the recumbent position, with the head and neck extended, the tongue was pulled out, jaws kept apart, and air gently blown through mouth and nostrils; with every effort chest and abdomen expanded as in natural breathing. Counter pressure with the left hand on the lower part of the thorax expelled the air with a whistling noise through the glottis; counter pressure on the abdomen alone failed to produce the noise. Heart action improved; its impulse could be seen against the chest wall, yet there was no effort at voluntary breathing. Puzzled at this phenomenon of heart beating for four hours without the faintest appearance of respiration, the idea struck him that the heart was stimulated mechanically, through the terminal filaments of the vagus, by air passing through the esophagus into the stomach, and not as he had imagined by the presence of oxygen in the fetal blood. To clear up this doubt he managed to pass air into the stomach through a small rubber catheter, and whilst doing so heart beats fell back to the original condition, slow and feeble, just ticking in the distance; but on resuming blowing air through the mouth and nostrils, the heart responded and improved as already described. This he did over and over again, and at last in despair and to his regret, left his patient. It then had a strong, bounding pulse. On returning the next morning he found the child dead. How much longer than four hours the heart continued beating he was unable to say.

Dr. W. C. McGee, of Ohio, catches the feet in one hand to hold child securely and places the other hand over the shoulders from behind, and two fingers on each side of the neck for its protection. Then he takes the child, head down and feet up, and begins up and down movement, at first slowly and then getting up to fifteen or twenty. If the cord is not long enough to permit motion, he waits five minutes, cuts the cord, and ties. He claims to have resuscitated sixty-eight cases within two minutes after birth. Other methods are: Schultze's mouth insufflation, Byrd's, Dewees', Forest's, Pacini's, Schroeder's, Sylvester's.

Regarding Schultze's method, Korber and Koffer, *Centralblatt Für Gynecologie*, 1893, have each reported a case of rupture of the liver with fatal termination, and Schultze himself reports a case, which suddenly died after resuscitation, the autopsy showing a broken bone having perforated the pleura and lung. Doctor Bissell is a strong advocate of suspension by the feet. In regard to the cord he says: "If we have to deal with the apoplectic form it is well to allow the umbilical circulation to continue several minutes after birth. The engorged vessels are thereby relieved without loss of blood, as occurs when the leakage is allowed from the severed cord. Should efforts at respiration not be made during the first two or three minutes, it is best to ligate and sever the cord, and throw the child on its own resources. With the anemic variety it is best to sever the cord immediately after birth, so as not to allow an increased loss of blood."

On June 9, 1900, at 10 P. M., I was called to attend a primaparae aged twenty-two. Abdominal palpation showed the child's back in the right flank, head below, and the extremities to the left above. The heart sounds were distinctly heard to the right and below the umbilicus. The os was sufficiently dilated to detect by vaginal examination the sagittal suture in the oblique diameter, the small fontanel toward the right sacro-iliac joint. The diagnosis was vertex presentation, right occipito posterior position. There appeared to be very little liquor amnii. At 6 P. M. Sunday, membranes still unbroken, the sagittal suture palpable in the transverse diameter, rotation forward exceedingly slow, pains kept up, mother's pulse about 80, fetal heart about 140. At 10 P. M. Sunday membranes ruptured spontaneously, very little liquor amnii; pulse full and strong, about 85. About 3 A. M. Monday gave hypodermatic injection of morphine ¼ and atropia 1-150 grs. She rested about 1½ hours. There being no indications for instrumental delivery, I simply waited. About 5:30 A. M. Monday, with head well down on the pelvic floor and vertex to the front auscultation failed to hear the fetal heart sounds. I then inserted two fingers of right hand into the rectum, hooked behind the chin, and with index finger and thumb of left hand pushed up the perineum towards the symphysis and spurring on the mother, head was delivered, trunk following very shortly after. It is unnecessary to say all manipulations were done with the strictest aseptic precautions. I might state here that there was a moderate laceration of perineum, which was repaired several hours later. The child presented a peculiar appearance; the hands and half way up the forearm, the feet and half way up the leg, were of a deep blue, as though dipped in dye; no other trace of cyanosis, the rest of the body being of a marble-like whiteness, the line of demarcation between blue and white being very sharp. There was absolutely no respiration, nor could the slightest heart sounds be detected, body extremely cold, no muscular tonicity, extremities and head hung loosely. Throbbing of the umbilical cord was barely perceptible, so ligated and cut at once. Immediately cleared out fauces with finger, removed as much aspirated matter as possible by suction, and then proceeded with mouth to mouth insufflation. At end of five minutes no respiration, and still could detect no heart sounds. Dashed cold and hot water alternately, then used Sylvester's method, keeping the child as warmly wrapped as possible under the circumstances. As near as I could judge, fifteen minutes after birth an occasional gasp occurred, followed by an interval of several minutes, when it would gasp again. I then detected a feeble heart sound, and very slowly continued the Sylvester method for about thirty minutes, with intervals of hot and cold douching, being timid at this time of any rough treatment, as Schultze's certainly is. I then injected hypodermatically over the olecranon of left arm approximately 1-250 grains of sulphate strychnia, 1-400 of nitroglycerine, and 1-400 of atropin. It seemed to work like a charm, for within forty minutes from birth, child had a pulse of 130, breathing regularly, and for the first time emitted a cry. I then on general principles used Schultze's method for eight times.

The second case was likewise a primapara, aged twenty; vertex presentation, L. O. A. position; was called at 9 P. M. Monday, June 18. Membranes ruptured at 2 A. M. Tuesday, 19th. Child born 3 A. M. same day. Much to my surprise, there was no respiration. It was pale, surface cold, no reflex action, extremities limp. I waited five minutes, using flagellation, etc., ligated and cut the cord. Then used the common restoratives, suspended the feet for about thirty seconds, while the mother's attention was engaged elsewhere. Child gave an occasional gasp, with intervals of several minutes of apparent cessation of respiration. The heart sounds were barely perceptible, but not more than forty per minute. I again injected hypodermatically a solution of strychnia, nitroglycerine, and atropin, and with the same results as in the previous case. Baby was put into its crib, hot-water bags applied. For a day was very quiet, but the second day yelled lustily. Both babies at the present time are good specimens of healthy infancy.

1815 Scott Street.

GUNSHOT WOUNDS OF THE SKULL.

By T. C. McCleare, M. D., Berkeley, Cal.

Read before the Alameda County Medical Society, Nov., 1900.

In looking over a specimen of gunshot wound of the skull it occurred to me that it might interest the society to see this example of the effect of a modern, high-velocity, small-caliber projectile, passing through the head; and at the suggestion of the president I brought it here to-night with some small-arm ammunition, used by both sides in our recent war with Spain and during the Philippine insurrection. In submitting these for your inspection, I will touch briefly on the modern small-caliber rifle and the change it has effected in military surgery, particularly with reference to wounds of the head. The rifle now in use by the United States military forces is the Krag-Jorgensen, which has a caliber of 7.62 mm. (ex. spec.); the Spanish use the Mauser, caliber 7 mm. (ex. spec.); while the Filipinos are armed with Mausers, or any weapon which they can obtain.

The small-caliber bullet is constructed with a core of lead, hardened by the addition of two to five per cent of tin or antimony (ex. spec.), inclosed in a jacket, composed usually of about 80 per cent copper, 20 per cent nickel, and a trace of steel, which prevents the spreading and flattening of the bullet, which always occurred with the old soft-lead variety, and thus does away with the frightful laceration seen in the wounds of a few years ago. The present U. S. projectile has an initial velocity of about 700 yards, and a range of over 4,000 yards, the high speed being due to the improved powder now in use, and the favorable shape of the bullet for overcoming atmospheric resistance. This velocity, the resulting direct course of the bullet without wabbling, its stability of form, small size and smooth surface, all combine to produce clean, small perforating wounds, the bullets rarely lodging or causing any extensive destruction of the soft parts or spongy bone. The new bullet passes directly through any portion of the body, whereas the old bullet stopped and flattened out or was deflected in an irregular course, or even split into two or more fragments on striking bony surfaces. It would appear that the increased efficiency of the modern rifle must result in general in a greater relative mortality, though this supposition is not altogether proven by facts; but on the other hand those not killed have a far better chance than formerly, owing to the few complications which occur, and the favorable character of the wounds. Indeed, by far the greater number of wounds now heal without other treatment than rest to the parts involved, and protection from outside infection. The bullet itself rarely carries infection. The character of the wound depends on the nature of the parts involved, velocity of the bullet, or on the range, since the velocity diminishes as the distance traversed increases. In this connection it is interesting to note that wounds, inflicted experimentally on the cadaver, vary greatly from similar wounds as seen in the living subject, the former being far more destructive to the tissues. Lodgment of the bullet is, of course, most frequent at long ranges or where the bullet has ricochetted from the ground or elsewhere, and has deviated from its true course, striking the body in eccentric positions and with velocity much diminished from the normal. The qualities of tissue which act in determining the character of the wounds are its density, elasticity, and the amount of liquid present either in cavities or in the tissues themselves. Thus, lung tissue, which has the least density, shows the least amount of lateral injury from the bullet passing through it, while the perforation of the skin, which is very elastic, so tends to close as to almost defy discovery. Within two hundred yards, or in the case of bones six hundred yards, there is always more or less lateral destruction of tissue or shattering of bone, the amount of such destruction gradually lessening as the range increases, but beyond these distances we almost always find clean perforations of soft parts and spongy bone, if the bullet has preserved its normal shape and course. In the case of cavities containing fluid, as the hollow viscera, the great glandular organs of the body, and the cranial cavity, the contents of which may be regarded from this standpoint as being in a relatively fluid or viscid condition, there is almost always very widespread lateral destruction, or, as it is technically called, "explosive effect." This is most marked at close ranges and decreases up to ranges of about 1,000 yards, where clean perforations occur. This explosive effect is due to the lateral transmission of the energy of the bullet through the tissue from that portion next the track of the bullet, to that beyond, and so on, and is best exemplified in wounds of the head, where very extensive lacerations of the brain and fractures of the cranium are found. While perforating wounds of the brain must still be fatal in the majority of the cases, an increased number will now come under treatment. These will necessarily be cases struck at long range, where the explosive effect of the bullet is slight, so there will be but little splintering of the bone. Usually, however, fragments of hair or small splinters of bone will be found just within the entrance wound, and these must, of course, be removed. If there is hemorrhage from the meningeal vessels or a depressed fracture, it may be necessary to trephine, but this is rare, and, as a rule, no treatment is required beyond antiseptic cleansing of the external wounds and protective dressings. Bullets striking the head at very long range or after deflection from some other object may lodge. In the event they may be found in the scalp, partially imbedded in the cranium just within the opening, imbedded in brain tissue directly in line of their course, or they may pass entirely through the brain, and, striking the inner surface of the opposite skull-wall, may be deflected in any direction again into the brain or under the membranes, or may stop in the brain and then gravitate through the soft brain tissues to lower levels.

In the examination of these cases only the gentlest and most careful probing is allowable. The X-ray affords a safer method of locating the bullet. In most cases, unless definite pressure symptoms manifest themselves, more damage would be done by attempts at removal than by allowing the bullet to remain, unless it lie immediately or close beneath the skull, where it may be removed by trephining. I know of only one case of lodgment on the brain, reported during the military operations of the past two years. In this a Mauser bullet struck the forehead 2 cm. above the orbital bridge and 3 cm. to the left of the median line, passing backward and downward and lodging, as shown by a radiograph, taken some months after the injury, about on the tentorium. This case recovered with slight weakness of the right arm and leg, and some disturbance of vision of the left eye.

Of a number of remarkable recoveries from perforating wounds of the head on record, I have knowledge of three cases. In one the ball entered the left temple about an inch behind the eye, and passing almost directly through the head, emerged at a corresponding point on the right side at a slightly higher level, evidently severing the left optic nerve and damaging the right, for the vision of the left eye was completely destroyed, and that of the right almost so, there being merely perception of light with this eye. The bullet did not traverse any great extent of brain tissue, but on the right side must at least have passed through a part of the frontal lobe, for beyond the loss of sight the boy suffered but little, the wounds healing by primary union. A second case was one in which the bullet entered the left mastoid, passed upward, inward, and forward, and emerged above the right eye. The man returned to duty in about three weeks, with nothing to show for his injury except the scar and some impairment of the hearing of the left ear. The third was a remarkable case. A bullet entered above the right eye, passed diagonally through the head, and emerged at the left of the occiput. As the man lay with his head on the knee of a hospital corps man, preparatory to the application of a first aid dressing, a second bullet made an almost similar wound, except that it entered from behind, and passed through the opposite diagonal, emerging over the left eye. The man was considered as good as dead, and though profoundly unconscious, continued to breathe, and was sent to one of the hospitals. His subsequent history I am unable to give, except that he lived, and was partially blind. The exact extent and nature of the injury to the sight I could not learn, but it was no doubt due to the damage directly done to the visual tract in the brain. When the case has been properly recorded, this man will take his stand in medical history alongside the one who had a crowbar pass through his head and yet lived to relate the incident.

EXTRA UTERINE PREGNANCY.

By A. H. Pratt, M. D., Oakland, Cal.

Read before the Alameda County Medical Society, Nov , 1900.

The question of extra-uterine pregnancy is one of very serious consideration both for patient and physician. The experience of physicians proves that the diagnosis is not always an easy matter. Cases vary so much in symptoms and history, to say nothing of pre-existing and complicating conditions. Recently a case was reported where the physician wished to make a diagnosis of extra-uterine pregnancy from the history, plus an enlarged tube, but was met by the statement on the part of the patient that an enlarged tube had been diagnosed from time to time for two years. Hence there was doubt, but the case proved to be an extra-uterine pregnancy, and ended in disaster. A history of the subject, with its many divisions, can be found on the shelves of our libraries, and will not be attempted by me, nor shall I name authorities, but in a general way will tell you what I have gleaned from my reading on the subject.

At the present time there seems to be no doubt in the minds of physicians as to the propriety of operating when once the diagnosis is made. In a series of 24 cases not operated upon the fatality was 68.8 per cent; in another of 265 cases, the mortality was 63.1 per cent; in a third of 515 cases operated upon, the death rate was 23.3 per cent. In other words, the ratio of fatality in non-operated cases was almost 1 to 3. I have not found a comparative table as to fatality in operative cases, where the operation was performed before rupture as compared to operation after rupture; but scattered all through the literature of the subject was found the strongly-urged importance of diagnosis before rupture, with the view of immediate operation. Indeed the united voice of the profession is for early operation, or as soon as diagnosis is made. If this dictum is true, then how great is the importance of diagnosis, and that, too, before rupture! This, then, is the point I wish to impress upon you: He who considers the subject easy and simple will do well to review the matter once more.

All are more or less familiar with the clinical history; the cessation of menstruation; the appearance of imperfect and unnatural flow of blood; the sudden pain; the membranous discharge; and ultimately the rupture with its attendant hemorrhage. About eight years ago I saw a case with Doctors Russell and Liliencrantz, a woman, age twenty-five, who had been regular previous to two periods, which she had missed. The details I can not recall, but that evening she had a very sudden and violent attack of pain in the pelvis. She was in collapse from shock. I could find no tumor, nor were there any signs of hemorrhage. The three physicians all thought the case one of extra-uterine pregnancy, but concluded to give her the benefit of the doubt. She recovered without an operation, and left the diagnosis a matter of doubt. About five years ago I saw a woman forty years old, who had never borne any children. She had been irregular for two or three months, and was having violent paroxysms of pain. There was an enlargement behind and to the left of the uterus, very tender to the touch, no fever. A diagnosis of extra-uterine pregnancy was made, in which Dr. F. L. Adams concurred, and operation was strongly urged. Doctor Burchard afterwards attended the case. She recovered without an operation.

A reference to books and recent journal literature shows that the basis of a diagnosis of an unruptured pregnancy of this kind are, a cessation of the menses for a period or two, an irregular hemorrhage usually slight with more than ordinary pain, a previous sterility and the presence of a tumor. The histories of two cases are reported that they may throw their share of light on the importance of a tumor in the diagnosis. On June 6, 1900, I saw, with Doctor Sanborn, Mrs. J., sterile, a very tall and thin woman, aged thirty-eight, married fifteen years; came to California from Pittsburg, Pa., about six months previously; had suffered from membranous dysmennorrhea for many years, so much so that life was scarcely worth living; menstruation often delayed a week; she had been curetted without benefit; last period March 10; slight show in April; during latter part of this month felt very badly; thought her heart was causing the disturbance. Her health continued much disturbed during May. In June felt better, fairly well. About 4 P. M., while sitting at table, was suddenly seized with a terrible pain in pelvis; was seen by Doctor Sanborn; fever came on, and pain continued. When I saw her, two days after, temperature was 102, abdominal pain was general with tympanites. There was a colored discharge. Vaginal examination was painful; uterus markedly fixed. I could find no semblance of a tumor but a suggestion of resistance on the left side. Diagnosis of extra-uterine pregnancy. Advised removal to a hospital and an operation. At 11 P. M. Doctor Krone was called, and concurred in the diagnosis, but suggested waiting until the symptoms showed receding rather than ascending tendencies. Next morning the symptoms were milder, fever less, also less pain and tenderness. She improved, but had slight tenderness and fever until June 24, when both increased. Saw her June 26, and advised operation. There was now a plainly-marked tumor on the left side of uterus as large as an egg. On operation fresh black clots were found, also faded ones, looking much like boiled liver. The tumor was removed, and proved to be a shell, filled with clotted blood. Adhesions marked. Old faded clots in Douglas' pouch. The right tube was distended, and fimbriated extremity closed. The appendix adherent to tube and enlarged. Both were removed. Curettement was done, and a urethral caruncle removed. Recovery was and is very satisfactory. A membrane was discharged on June 10, immediately after her first pain.

Case II. Saw Mrs. R. with Doctor Sanborn August 16; aged 30, married twice, had two children by first marriage, youngest five years old. Had been a widow nearly five years; married second time Dec. 3, 1899. She was a hearty, robust woman, menstruation always regular and natural in quantity and quality from time of marriage till June 26, 1900. July 22, when five days over time, had a violent pain low down, lasting two hours, with milder ones continuing thirty-six hours. She then began to flow, as she thought, naturally. Within two days flow ceased, pain returned, accompanied by a bloody discharge, which continued until I saw her. From this time she suffered severely. Examination showed no tumor. To determine diagnosis positively chloroform was given, when no tumor could be made out. It was decided to curette and wait. This was done at 6 P. M. At 7 Doctor Sanborn returned, and found her blanched and pulseless. At 8:30 P. M. Doctor Stratton and I saw her, when we decided to send her to the hospital, where she was placed on the table at 11:55 P. M. She was pulseless, and two quarts of normal salt solution were given intravenously. The abdomen was full of blood; the left tube was enlarged about an inch from the uterus to the size of a hazelnut. Between this enlargement and the uterus this tube was ruptured transversely across its superior surface. She made a complete and satisfactory recovery.

The lessons drawn from these cases are:—

First, beware of the curette in a case of suspected extra-uterine pregnancy, for I feel that during the curettement, and while pulling down the uterus, we caused the rupture of this tube. It would probably have occurred, but to my mind that would not remove the responsibility.

Second, that in the two cases mentioned no tumor could be found; that both terminated in operation with confirmation of diagnosis and recovery.

ABSTRACTS.

POTASSIUM PERMANGANATE IN OPIUM AND MORPHIN POISONING.

Moor (The Permanganate Treatment of Opium and Morphin Poisoning, 1899) in this monograph reviews the reported cases of opium poisoning treated with potassium permanganate, and emphasizes the following points in the treatment: One grain of the antidote in 1 ounce of water per os for each grain of morphin. One grain of potassium permanpanate in 1 ounce of water for each 10 grains of opium. One grain of the antidote in 1 ounce of water for each dram of laudanum. If the quantity of poison injected can not be ascertained. 8 or 10 grains of the antidote dissolved in an ordinary glassful of water should be given at once, and this dose repeated once or twice at intervals of 30 minutes. A weak permanganate solution, about 1 grain to a tumblerful or half a tumblerful of water, should be administered every 30 minutes during the entire stage of opium narcosis, and even for some time afterwards at intervals of 1 hour. One grain of permanganate dissolved in 1 teaspoonful of water should be injected hypodermically every 30 minutes, with simultaneous gentle massage near the site of injection.—Philadelphia Medical Journal.

TRANSFUSION.

Annandale (Scottish Medical and Surgical Journal, September, 1900) draws the following conclusions in regard to transfusion: That it may be a valuable aid in saving life in the case of patients suffering from serious loss of blood, provided they show no signs of reaction after the ordinary means have been carefully tried. That the best form of transfusion for ordinary use is the injection of human blood mixed with a solution of sodium phosphate, and kept at a proper temperature, so as to prevent clotting. That if the former method can not be properly carried out, the injection into a vein of saline solution (sodium chloride) is the next best procedure. That intra-peritoneal injections of warm water, or warm saline solutions, are most likely to be useful in cases in which the abdomen has already been opened, for without an opening there is always a risk of injuring the intestines or other internal organs with trocar and canula. That injections of warm water, or of warm saline solutions, into the rectum, or into the cellular tissues, is a safe and simple procedure, which may be usefully employed in any sudden emergency.—Philadelphia Medical Journal.

VOMITING FROM COUGH IN PULMONARY TUBERCULOSIS.

Mathieu (Rev. de Therap. Med. et Chirurg., Aug. 1, 1900) makes the following suggestions for the relief of vomiting induced by paroxysms of cough after meals. Small pieces of ice swallowed immediately after the meal often prove successful. In other cases, chloroform water, with an equal quantity of water to prevent burning of the fauces (4 to 8 drams of the mixture), taken 4 or 5 minutes after meals, will often serve to check the cough. The author, however, has found bromoform water less irritating than chloroform water, and recommends a combination of the former with sirup of codein. Menthol is also efficient, and may be given in doses of 2 or 3 grains in the form of an emulsion. When all other remedies fail, morphine and cocaine in equal quantities should be given in distilled water.—Philadelphia Medical Journal.

THE TREATMENT OF PHTHISIS.

Rea (Pennsylvania Medical Journal, 1900) believes that the combination of pulmonary gymnastics with intra-pulmonary medication by nebulization under high pressure, is a plausible and successful means of fighting this disease. A combination of creosote terebene, oil of eucalyptus, menthol, and a liquid form of petroleum is recommended. This is advocated on account of the belief that such drugs, particularly creosote, used in this manner, lessen the fertility of the soil by improving the catarrhal condition. Of all internal remedies that have been advocated, probably creosote has stood the test of time best. It improves appetite, lessens the bronchial inflammation, decreases auto-infection from the bowels, lessens the fever, etc. Recently, however, he has administered ichthyol almost exclusively in place of creosote, and believes it served the same purpose just as well, and yet did not seem to be so irritating to the stomach. Iodoform inunctions, as recommended by Flick, he has used, and believes that they have virtue. The deficient innervation and impaired circulation must also be carefully looked after.—Philadelphia Medical Journal.

PROPHYLAXIS AGAINST TUBERCULOSIS.

Abbott (Hygiene of Transmissible Diseases, 1899), after dealing with the treatment of sputa, and recommending the paper "Japanese handkerchief" for use when the patient is away from his apartments, continues as follows: "Bed-clothing or night-clothing soiled with tuberculous sputum should be at once removed and scalded. The consumptive should be provided with his own eating utensils, napkins, etc., and these should be used by him alone, and should be scalded immediately after use. The refuse from his meals should also be scalded, never used by others. The living and the bed-room of the patient should be kept scrupulously clean, and should be frequently aired. Under no circumstance should spitting about the room be permitted. 'Dusting' should not be practised, but when necessary all objects should be wiped with a cloth moistened in 1 to 1,000 corrosive sublimate, or 3 per cent carbolic acid solution. The importance of this precaution is conspicuously illustrated in Cornet's investigations by the marked difference between the dusts from medical wards of hospitals, where there is more or less laxity concerning the importance of cleanliness as a factor in asepsis, and the dusts from surgical wards, where this point is kept constantly in mind. Kissing, caressing, shaking hands, and other modes of intimate association should not be indulged in by the consumptive. The hands should be thoroughly washed after manipulating tuberculous patients."—Philadelphia Medical Journal.

THE VALUE OF ANTISEPTIC NEBULÆ IN PULMONARY TUBERCULOSIS.

Thomas (Chicago Medical Recorder, October, 1900) draws attention to the value of antiseptic nebulae—formalin (6 per cent), eucalyptol, oil of cinnamon, etc.—in the treatment of pulmonary tuberculosis, and draws the following conclusions: 1. The respiratory capacity, so limited in tuberculous patients, is increased. 2. The catarrhal condition of the air-passages is diminished, thereby aiding a better introduction of air into the lungs. 3. The pulmonary passages are kept in an aseptic condition, and the danger of new bacilliary invasion minimized. 4. The marked relief of cough and dyspnea. 5. The alimentary tract is undisturbed by drugs, giving ample opportunity for the increase of vital resistance by suitable diet and constitutional treatment.—Philadelphia Medical Journal.

ASPIRIN.

Salicylic acid, first used to relieve and cure rheumatic conditions, was found to be too irritating, and it was combined with sodium to give sodium salicylic, which soon superseded the uncombined acid in the treatment of this disease. Later it was noted that, although of marked benefit, it possessed disadvantages such as derangement of the digestive functions, nausea, headache, and ringing in the ears. If a substitute could be found or if it could be so modified in composition and properties as to retain its virtues without its defects, we should approach the ideal remedy. Such an improvement has been produced in the substance, called for convenience, aspirin. It has an agreeable odor and taste, undergoes little change in the acid contents of the stomach, but in the small intestine is decomposed with the liberation of salicylic acid in the nascent state. The acetic liberated at the same time combines with the alkalies present in the intestine to form sodium and potassium acetates. As a result of its chemical qualities it exerts no irritant action on the stomach, does not impair the appetite, excite nausea or disturb the digestive processes. Its physiological action is closely allied to that of salicylic acid, but it does not cause ringing in the ears, headache, or depress the heart. It has been employed in the treatment of rheumatism of the acute and subacute types, and in those complicated with cardiac troubles. It reduces pain, swelling, and temperature; it has been also employed in muscular localizations of the disease, as well as in tonsillitis, neuralgia, etc. Given in doses of five to twenty grains, it is an efficient remedy, best administered, on account of its insolubility in water, in powdered form with sugar, or enclosed in wafer or capsule.

AN IMPORTANT NOTICE—THE INDEX.

The index for volume 14, which has been unavoidably delayed, will appear next month under separate cover, so that it can be bound with its own volume.

A CORRECTION.

We stated in our last issue that Dr. A. T. Regensburger had resigned from the faculty of the College of Physicians and Surgeons, whereas it was Dr. A. E. Regensburger, the professor of Dermatology, who severed his connection with the school.

Occidental Medical Times

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THE PLAGUE AND THE PACIFIC MEDICAL JOURNAL.

The *Pacific Medical Journal* in its issue of December makes a rather lame attempt to reply to our publication of the facts in this unfortunate controversy. There is much of abuse, of quibbling, and of distortion of facts, with which we shall not deal nor shall we enter into refutations of matters that merely concern the MEDICAL TIMES. There are however, several misstatements of facts that are very vital to the question, and these can not be permitted to pass unchallenged.

With the opinions of the newspapers, the clergy, the legal profession, the banks, railroads, etc., which our contemporary delights to quote as authorities on questions of public hygiene and bacteriology, we have no concern; but when the medical profession of the state is bulked with these, it is time to protest. The fact is that but one, or possibly two, medical men of any distinction have cared to place themselves in opposition to the array of authority quoted in our issue of November. In this connection it will be pertinent to note that on Dec. 14, 1900, DR. D. A HODGHEAD, one of the managing editors of the *Pacific Medical Journal*, reported to the San Francisco Health Office that a Chinaman, at 844 Washington Street, was sick, and that the case "was suspicious, and needed investigation."

Our contemporary says:—

> "The *Times* can not appreciate the position of this journal in publishing an editorial in August to the effect that no plague existed or had existed in San Francisco, while permitting an article written by Dr. Craig to appear, in which he seems to admit that plague existed here. Even the *Times* should know that this journal is not responsible for the views of its contributors, and if the *Times* and its Pharisaical supporters could appreciate the liberality that allows men to have differences of opinion, it might be somewhat better for the harmony of the profession in this state. Moreover, the statement of Dr. Craig does not in any measure prove that plague existed in this state. He never saw a case, dead or alive; he never investigated any supposed cases. He took his evidence from the same source that the *Times* does, but, unlike the *Times*, he supposed that all officials were truthful."

Our contemporary, in disclaiming responsibility for the views of its contributors, is in line with the policy of most journals, but it differs markedly from them in distorting their language and misrepresenting their position. The article in question does not state that DR. CRAIG "seems to admit" that plague existed here, but plainly says, "In San Francisco eleven well authenticated cases of plague occurred here within ten months." The charge made that DR. CRAIG never saw a case, "dead or alive," is very dangerous ground for the distinguished editor of our contemporary, since he is in exactly that position, and has persistently, and no doubt shrewdly, refused to be present when what he called the "supposed cases," whether dead or alive, were undergoing investigation. Is not this also the position of the distinguished gentlemen quoted in support of our contemporary's position? If the statement that DR. CRAIG "never investigated any supposed cases" refers to ante-mortem or post-mortem work with subjects of the disease, we can not affirm or deny it; but if it relates to the bacteriology, it is entirely without foundation.

Our contemporary, referring to cases 14 and 15, says: "The work done in DR. MOUSER's laboratory upon these two cases was carefuly inspected by DR STERNBERG, Surgeon-General of the United States Army, and probably the leading bacteriologist in America, and by him the conclusions arrived at by DR. RYFKOGEL and PROFESSOR MOUSER were concurred in." The absolute falsity of this statement is apparent, because their conclusions differ widely, and upon reading the following extract from a letter of DR. STERNBERG, dated Nov. 19, 1900:—

> "I would say that when I visited DR. MAUSER's laboratory, at his request, I refrained from giving any positive opinion with reference to the bacillus, which he had isolated from the cadaver of a Chinaman supposed to have died from plague. Under the microscope, the bacillus he showed me did not look unlike the plague bacillus; but, as I said to him, no one would be justified in pronouncing definitely that it was or was not, from a simple inspection of a microscopic preparation. The culture which DR. MAUSER showed me had very much the appearance of a culture of the colon bacillus. I was in DR. MAUSER's laboratory but a short time, and did not attempt to pass judgment with reference to the bacillus which he had isolated, and informed him that I had not, personally, had any opportunity to study the plague bacillus."

The distinguished editor of our contemporary in quibbling over our reference to the case of the Coptic, the epidemic at Glasgow, the fatality of the disease, and the lamented case of ANNE ROEDDE, is simply amusing. If he will review what has been written about the existence of the plague, he will find that he and his "lieutenants" have been the only people in San Francisco that have claimed that the pneumonic form has ever been found here, with the solitary exception of the case of the Chinese baby that died on November 2. These statements are fabrications pure and simple. When the *Pacific Medical Journal* states that "no ship has ever been quarantined here for plague," it again shows its perversity or its ignorance of the facts. Our contemporary has already been asked to examine pages 1066 and 1079 of the Public Health Reports for the year 1899, and the report of the local Board of Health for July of the same year.

Our contemporary says: "Our ships are given clean bills of health, . . . although more than once when a clean bill of health has been signed, a private letter has gone on the same ship, signed by the same party, one signature giving the lie to the other." This is certainly a grave charge to make against the Collector of the Port of San Francisco, and one that demands investigation at the hands of responsible authority.

We will not, at this time, pursue this controversy further, but signs are not wanting that even in the absence of extension of the disease, the persistent abuse and misrepresentation of Federal officers, and, therefore, of the Government of the United States, must come to an end. The state of California is but a small part of the national body politic, and its alleged interests will not be allowed to conflict with those of the country at large. If a result of the noisy villification that has been in progress for many months would be the establishment of the existence of plague by the highest responsible authority, the "false prophets" may regret much that has been said and written.

It may be that, in view of this, our contemporary is preparing for a "change of base," as the following, which is the closing sentence of the editorial we have been discussing, seems to imply. "Should the disease at any future time develop, that would be no evidence that it has existed here during the last nine months." There is a certain prophetic ring in this, and "he who runs may read."

THE RESIGNATION OF DR. BAZET.

On Jan. 8, 1901, Dr. Louis Bazet closes his career as a member of the local Board of Health. Ordinarily the resignation of a member of either the local or state board is a matter of mere political concern; under existing conditions, however, the retirement of so capable and distinguished an officer, and the reasons therefor, are matters worthy of notice.

Dr. Bazet has been a member of both boards. He has been a conscientious and a faithful worker. He is earnest and fearless in the performance of his duty. He has fully demonstrated that his appointment was not a political favor, but one that gave gratuitously the labor of a scientist and a distinguished physician to an unappreciative public. In June 1900, after a stormy meeting of the State Board, wherein an effort was made to intimidate the board against declaring the existence of bubonic plague, and after a memorable arraignment of the governor, he tendered his resignation. Now comes his retirement, for the very same reasons, from the local board.

The reasons for his actions are those usually urged by worthy men against holding a political office, with this exception, that the causes that have forced this step upon him, have been brought about by our most influential citizens. That which cuts deepest is the ingratitude towards an honest and conscientious performance of duty. The charges of deception, fraud, and actual thievery, made without consideration or truth, against the board, bespeak a most unjust condition of the public mind. The extreme selfishness of individuals, blinded by financial interests to the truth and to a fair consideration of the opinions of others, naturally renders a faithful fulfilment of the obligations of a public office distasteful and embarrassing. The charges of ignorance and incompetency, so boldly and defiantly put forth by the press, though they knew the facts, were humiliating to a degree. This nefarious work of the press might have been condoned had not such organizations as the Board of Trade, the Chamber of Commerce, the Merchants' Association, etc., condemned, and do still condemn, the actions of the local board, Dr. Bazet and Dr. Kinyoun, not only after a full acquaintance with every detail, but in defiance of the very highest medical authorities of America and the reports of the Government of the United States. These organizations, composed of our most respected citizens, and originally founded to encourage and to protect our business interests, to correct abuses, and to give to the world our true status, present the unhappy spectacle of forcing honest men out of office, purely and simply because these men gratuitously and at a great sacrifice told the truth in the performance of their duty. Such a state of affairs will bring upon these very people a mistrust and want of confidence more destructive to the interests they are so zealous to protect than bubonic plague. Their recent memorial to the Secretary of the Treasury is a lasting and unqualified disgrace. When will this incomprehensible attitude of our people cease? Are they deaf to the opinion of the medical world, that has pronounced the findings in 22 cases beyond all doubt bubonic plague? Are they so inflated with their own magnitude as to think that the eyes of the world are not upon them, and that their chastisement will not come? Are they so content in their arrogant wisdom and knowledge as not to harken to the cry for protection from other states? Are they so indifferent to truth as to allow the press to proclaim them to the world as falsifiers? Will they still defy a danger that may yet overwhelm their homes and their commerce? Will they believe exactly similar evidence of the disease in other ports and deny it in their own case? Will no one arise to defend their honor and their good name before driving honesty from their offices, and before sacrificing their dollars and their lives on the altar of persistent and wilful ignorance?

SOCIETY PROCEEDINGS.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting November 13, 1900.

The president, Dr. E. E. Kelly, in the chair.

ANEMIA.

Dr. Philip King Brown read a paper, "Primary Anemias, with Exhibition of Cases." He presented the following cases before the society:—

Girl of 17 years,—case of chlorosis.

Man, ship-joiner, 31 years of age,—case of pernicious anemia.

Woman,—case of splenic anemia.

Dr. A. W. Perry read a paper, "The Relation of Anemia to Hyper-acidity of the Stomach."

Dr. H. B. A. Kugeler read a paper, "Anemia in Its Relation to Surgery." (See page 8.)

Drs. E. E. Kelly and Lois Nelson reported a case of "Pernicious Anemia, Autopsy Findings." [To be published.]

Dr. W. Ophuls: "One point in the last report seems rather interesting; that is the absence of iron pigment in the spleen, especially in view of the fact that there was a good deal of iron in the liver and bone marrows. I am just as convinced as Doctor Brown that the atrophy of the intestinal mucous membrane, which is often found in pernicious anemia, is not the cause of the disease. I have seen cases in which this atrophy, if there was any at all, was so insignificant as to make it impossible to make use of it in an endeavor to explain the severe changes in the blood. In other cases I have seen very marked atrophy of the intestinal mucous membrane accompanied by a perfectly normal condition of the blood."

Dr. G. W. Cable: "I have been intensely interested, especially in Doctor Brown's report, and it is for personal reasons. I have been so interested that I wish to present myself as a case of pernicious anemia. According to the best authorities in the northwest, I should have been under the sod long ago. Three years ago in January they told me I had progressive, pernicious anemia. I have exhausted all sources of information trying to find some remedy. The only treatment mentioned to-night is arsenic. I wish some of the gentlemen would give me an idea as to the treatment, whether or not there is something besides arsenic. I have the opportunity to search the very best literature on this subject, and have found as many good men to say that iron is good for nothing as those recommending it. Not one of the men know anything about pernicious anemia; the more I have read and studied this subject the more I am convinced that not one of the authorities know as much about it as I do. I could tell you a great many things about pernicious anemia that Doctor Brown has not mentioned. I could tell a great many things about the way it has affected me, that are not mentioned in the books."

Dr. J. H. Barbat: "I would like to ask some of the gentlemen if they paid any attention in this anemia to the blood plates. The blood plates bear a distinct relation to the rest of the individual. I do not know now whether or not the condition of the blood has thrown any light on the value of the blood plates."

Dr. Philip King Brown: "In regard to the treatment, there has been so much said about arsenic that I want to make clear my own position. I do not believe in the administration of large doses of arsenic. I give from two to ten drops of Fowler's solution, kept up for a very long time. I do not believe that arsenic has very much to do with remissions one way or the other. It has a certain regenerating influence on the red cells, but so far as I have been able to see in the two, I can not say that arsenic does very much good. However, I always give arsenic because I have to give something. In the cases taking arsenic, diarrhea is often mistaken for arsenical poisoning. I believe that Doctor Abrams reported recently that he gave as much as 50 to 60 min. of Fowler's Solution a day. When he observed diarrhea, he let up on the arsenic. Unless I had other symptoms I would not let up on the arsenic, because I believe the nausea and diarrhea are paroxysmal conditions occurring in pernicious anemia, and we have all seen them frequently independent of arsenical medication."

Dr. H. B. A. Kugeler: "I have little to add to the remarks brought out in the discussion, except to call attention once more to the importance of the differential diagnosis between pernicious anemia and carcinoma of the stomach. I did expect to encounter considerable opposition by advocating surgical intervention in anemia, that is, in the form known as splenic leukemia."

THE CALIFORNIA ACADEMY OF MEDICINE.

November 27.

Dr. D. W. Montgomery.

LEPROSY.

Dr. Howard Morrow exhibited a man fifty years of age, suffering from leprosy. He was born in Germany, but for the past fifteen years had lived in the Hawaiian Islands. He roomed with a male leper for one year in Honolulu. Six months ago he noticed a white area on the ulnar side of the wrist of the right hand, with slight traction of the little finger and shooting pains in it. Four months ago several brownish-red nodules developed on this whitened area, and others appeared in the skin on the back of the left hand, two on the forearm, one on the shoulder, two on the abdomen, and one on the right thigh. The nodules on the hand were confluent and anesthetic to pain, heat, and touch; other nodules were seen, slightly indistinct. The case was of interest, because no bacilli had been demonstrated on sections taken from the nodule on shoulder; also because there was no fever with the development of the nodules, and from the fact that no nodules had developed since the patient came to this country, two months ago. Histological examination showed areas of plasma cell infiltration in the corium, and a few larger cells which were probably "lepra cells," but no bacilli could be found in them.

Dr. D. W. Montgomery said this case was particularly interesting on account of its resemblance to either leprosy or syphilis. When he first saw the case he had thought it was syphilis, but the anesthesia threw doubt on such a diagnosis. He found some places on the body where he had expected to find lepra bacilli, but they were not found. Doctor Morrow did find some bacilli, which, stained with methylene blue, were grouped, and resembled very much the lepra bacillus. These bacilli were very short. The fact of there being anesthetic areas over several of the infiltrations, and of his coming from a leprous country, and living with a leper, certainly pointed to a diagnosis of leprosy. He was put on syphilitic treatment simply because no lepra bacilli were found, and not because results were really expected from such treatment. There were some points, also, in the histology which pointed to leprosy and not to syphilis.

CARCINOMA OF STOMACH.

Dr. T. W. Huntington exhibited a case with the following history: A man aged sixty-five, native of Ireland, was admitted to Ward A, City and County Hospital, about August 1, 1899. Previous history: For past year health had gradually failed. Had suffered from pain in epigastrium, anorexia, occasional emesis, constipation, and gradual loss of weight. On entrance was very weak. Refused solid food, and would take only limited quantities of milk. Pale, anemic, and cachectic. There was a distinct mass beneath and below ensiform cartilage. Pressure at this point elicited pain. Examination of stomach contents showed absence of hydrochloric acid and an excess of lactic acid. Stomach greatly dilated. Diagnosis carcinoma at or near pylorus. Operation August 5, 1900. Median line incision below ensiform cartilage. Upon exposing pyloric end of stomach there was discovered an indurated mass occupying the pylorus, and extending along lesser curvature of stomach for four or five inches. The upper part of duodenum was thickened, but not distinctly indurated. Adjacent organs free from metastases. The upper portion of the duodenum, the pylorus, and lower segment of stomach were removed. The stomach was closed by a double row of Lembert sutures, and the upper end of duodenum was attached to posterior wall of stomach by a Murphy button. The parietal wound, owing to exhausted condition of patient, was hastily closed by through and through silkworm-gut sutures. For five days the patient was fed per rectum. After that time food was given in small amount by the mouth. The patient made a fairly quick recovery, and the button was recovered on the thirteenth day.

Pathological report: Prof. A. E. Taylor reported the specimen to be one of carcinoma of stomach and pylorus. There were evidences of malignancy at or near the upper margin of the stomach wall.

Subsequent history: After the first three weeks solid food was ingested and digested with comfort. He gained weight and strength slowly, was free from pain, appetite good. On October 1 the supra-clavicular glands were found to be enlarged and indurated. At the present time the glands above noted are apparent, but not so large as when first observed. There is a well-marked ventral hernia at site of incision. Patient's appetite remains good and digestion excellent. There is a suspicious feeling of resistance below ensiform cartilage, but no tenderness, and the inference is that if there is a recurrence of the growth in the stomach wall, it is remote from the anastomotic orifice, and nonobstructive. He is able to be about, and seems to enjoy an altogether comfortable existence.

The ventral hernia will be repaired in the near future, and the case carefully watched with reference to final outcome.

Dr. Dudley Tait said there were several interesting features in Doctor Huntington's case. The extent of the involved area was remarkable. He had never seen a pyloric growth extending in the direction of the duodenum. In one specimen of pyloric cancer seen at the dead table, he noted an infiltration of the submucosa of the duodenum. The serous and mucous layers were apparently intact. The usual ocular inspection in an operation on such a case would have proven useless. In a growth like that described by Doctor Huntington, involving one-third of the duodenum, the pylorus and a portion of the stomach, one would expect to find several glands, especially in the retropyloric region. All operations are useless unless these glands are completely removed. The supra-clavicular glands found in carcinoma of the abdominal viscera are not always malignant. In two cases of cancer of the stomach, under observation at the French Hospital, Doctor Tait had removed a large gland from the neck which proved to be tuberculous. In both of these cases all radical measures had been considered useless on account of the presence of the enlarged supra-clavicular glands.

Doctor Huntington said that he had been in doubt regarding the condition of the duodenum, and removed a portion of it because it looked suspicious. He was aware that it was not usually involved. The retro-pyloric glands seemed normal, though no doubt, if he had gone up the lesser curvature to the cardiac orifice, he would have found some enlarged. The patient improved wonderfully after the operation. He now injests and digests food well, and gains in strength. While he thinks he did not remove enough of the stomach, the operation has certainly been justified by the comfort of the patient following it. Recurrence, if there had been any, had been through the glandular system.

CRETINISM.

Dr. H. C. Moffitt reported four cases of cretinism. This little girl of twelve is a typical cretin; her parents are Swedes. The mother had tubercular glands as a child. There is no history of goitre in any of the descendants. She was born and has lived here. The father was drunk much during the pregnancy, and kept the mother in a constant state of trouble and excitement. Labor was difficult, but no instruments were used. There are two healthy children in the family. From birth the mother noticed that the baby was abnormal. She was yellow and hungry-looking, slept all the time, never cried, had no teeth till fourteen months, and did not walk or talk till three and a half years. She had cholera nostras at eight months, measles at fourteen months, diphtheria two years ago. The skin was always dry, face swollen, head and belly big. The intellect developed hardly at all; the vocabulary was small; she talked little; the voice was harsh and monotonous. The bowels never moved naturally; urine was involuntary. At times there were indefinite pains, chiefly in the legs. At varying times nine physicians had been seen, who had treated promiscuously for liver, malaria, etc. For three years there had been little if any growth. On first examination, August 12, 1899, she was a typical cretin, with sunken nose, broad, flat features, yellowish-green color, big lips, thick tongue, and supra-orbital and supra-clavicular pads. Voice was hesitating and harsh. Teeth bad, but four second teeth. Lordosis, big, prominent belly, with diastasis of recti and umbilical hernia. Gait slow and waddling, feet and hands short and thick, with marked dorsal pads. Height, 101 cm. Urine, negative. Weight, 41 pounds. Blood: reds, 3,150,000; whites, 6,000; hgl., 40 per cent. No nucleated reds. Differential leucocyte count; polynuclear, 60; small mononuclear, 27.5; large, 4; transitional, 2; eosinophiles, 6; myeolocytes, 5. Thyroid could not be felt. Under treatment improvement has been marked. The mental condition has improved steadily, so that she is now at school. Color is normal; swellings have disappeared. She can walk well, the voice is clear, and she talks considerably. The bowels are regular, but incontinence of urine still persists. The cranial peculiarities still mark the cretin. Height is now 117 cm.; weight, 52.25 pounds. Treatment has been with Burroughs & Welcome's thyroid extract in small doses, one to three grains daily. It has to be taken continuously. There have been no outward symptoms.

II. This second small girl thirteen years, a native of Napa County, where she still lives. The parents are Irish, with absolutely good history; three others are well. As an infant she had double otitis media, pertussis, measles four years, mumps one year ago; no other affections. Development was apparently normal until four or five years ago. She had been at school, and was unusually bright. The symptoms noted by the mother, who is not observant, were slowness and dulness, cessation of growth, swelling of the face, loss of hair, change of voice, and increased susceptibility to cold. When seen first, July 24, 1900, the facies was typical of myxedema; lips thick and blue; eyelids puffy and purple; face swollen and waxy; nose thick; skin scaling; hair dry, and very thin in patches. The photographs show this well. No thyroid could be felt; supra-clavicular pads were marked; no pubic hair; belly prominent; hands swollen; organs of thorax and abdomen negative; voice harsh and slow; intelligence fair; skin everywhere dry and scaly. Temperature 98.4 degrees. Urine 1.012. Albumen and nucleo-albumen, trace. Urea .5 per cent. Height equals 123 cm. Weight, 62.25 lbs. Blood, no nucleated reds. Leucocyte count normal. Chloranemia. As you can see, improvement has been great, the girl seems perfectly normal in every way. The hair has grown in, the swelling entirely disappeared. Weight, 52 lbs. Height, 127 cm. There was great susceptibility to the thyroid extract. At first no more than one-half grain of the Burroughs & Welcome's extract could be given without production of nausea and vomiting and headache. Gradually she was able to increase to one and one-half grains daily. Now one grain once daily is sufficient, and this amount will not have to be given constantly. Probably one grain weekly will be sufficient to prevent recurrence. III. The first patient shown demonstrated congenital myxedema. The second, the acquired, or juvenal type. By the kindness of Doctors Sherman and Merritt, of the Children's Hospital, I am able to show now a boy who shows a combination of idiocy and cretinism. He is now seven, has only lately learned to walk and to talk, and even now can command but rambling gibberish. The parents are healthy and without particular history. There are other healthy children. The mother dates abnormalities of the boy to an attack of pertussis at 11 months. Since then development has been extremely slow. As we see him now, the mental lack dominates the picture. For cretinism speak the thick tongue, that has reduced under thyroid treatment; the peculiar flush on the waxy cheeks; above all, the general appearance as he waddles about, undressed among you now. Even before treatment there was little change in the skin. Thyroid extract has been tried but two weeks with him; it may further growth, but will do nothing for the mental state. II. It is impossible to show this patient,—a boy of three years, who illustrates still better a condition of idiocy with cretinism added. In him injury occurred during instrumental labor. There were convulsions for some days, and development has never been normal. There is micro-encephaly, mouthing idiocy, inability to stand or talk. But in addition, when first seen six months ago, there was marked swelling of the face and tongue and hands, of myxedematous type, and this swelling has disappeared under small doses of thyroid. As a rule there is no trouble in recognizing cretinism, endemic or sporadic. Sporadic cretinism is not uncommon in San Francisco or throughout California. I know of seven cases in the city and three outside. With increasing advertisement of the condition has come the tendency to ticket with the diagnosis cretinism much that belongs under other heads. I have seen so-called cretins that were either congenital idiots, or marred by early encephalitis, etc. Dwarfishness, pure and simple, or following fetal or later rickets, can rarely give rise to cretinism. In my experience there is little need to give thyroid in large doses; with an active preparation 1 to 3 grains of the extract daily will be sufficient. There seems to be no advantage of iodothyrine over a good extract.

Doctor Huntington said that some years ago he had removed an entire thyroid, and the patient had developed myxedema within a year. He is a bookkeeper, holds a responsible position in Sacramento, and remains in very good condition, but has to resort to thyroid treatment for about a month at a time three or four times a year. He has not seen him now for several years, but understands he is living a useful life.

Dr. Wm. W. Kerr, in discussing the treatment of this condition with the thyroid extract, said that the dosage necessarily varies, and depends largely on what preparation is used. A patient was taking 15 grs. a day of the preparation of a certain manufacturer. This patient went east, and was referred to Starr, who put him on Burroughs & Welcome's preparation, and he improved remarkably on 5 grs., first twice, and then once a day. Another patient takes 5 grs. of this preparation once a week. He had consulted cattlemen for an explanation as to this difference in American and English preparations, and believed it is due to the fact that in this country the thyroid gland in the sheep atrophies after the first year. Regarding the duration of the treatment; if the gland has been removed, or there is deficient secretion, the patient will always have to use the extract.

Regular Meeting December, 18, 1900.

Dr. D. W. Montgomery, the president, occupied the chair.

TUBERCULOSIS OF HIP JOINT.

Dr. H. M. Sherman presented a case which had already been before the Academy. At that time he showed the result of an excision of the elbow, and called attention to the hip of the same side, which was swollen, and tender in places; on one day the boy could walk well, and on another he would be lame. The salicylates had failed to be of benefit. Some time before there had been a fluctuant swelling in the upper part of the thigh; and, for the sake of exploration, this had been emptied by the aspirator, the contents being clinically tuberculous pus. This particular abscess had not refilled, and its emptying had caused entire disappearance of the symptoms which accompanied it. The symptoms noted at the time the case was in the Academy developed later, and were not the same as those of the abscess. The case very strongly suggested hip-joint tuberculosis, but an analysis of the symptoms prevented that diagnosis. After being shown at the Academy, the boy got steadily worse, and the general swelling softened in one part above the trochanter, and fluctuation was palpable. The opening of this fluctuant place let out tuberculous pus, and the cavity led down to the rim of the acetabulum at its upper part, where was found a sequestrum, wedge shaped, and quite free. It was removed, its bed scraped out, and the cavity and joint, which were already open into the abscess, were thoroughly washed out. The femoral head appeared normal. The wound was closed with temporary drainage, and healed very kindly. Very shortly it broke down again, and formed a sinus leading into the joint, and always discharging. A formal excision of the hip was done, and considerable of the ilium, the seat of a tuberculosis that had spread from the site of the sequestrum, was removed. The wound was packed with sterile gauze, and made to heal from the bottom, which it did without incident. By this time the elbow had again broken down, and it was again laid open and thoroughly scraped out and washed. It, too, was packed, and healed uneventfully. Since these operations the general health of the patient has been perfect, and there has been much increase in weight. The elbow is especially satisfactory; flexion is efficient and of normal range; extension is not so strong; the hand can be put on the head, and is commonly used for all ordinary purposes. The use of the hip has not yet begun.

In this case it seems likely that the elbow was the primary lesion, and the hip secondary to it, for no other lesion, skeletal, glandular, or visceral, can now be found; and his health and general development do not suggest the idea of a latent lesion, though they may not be absolutely incompatible with the existence of one. Section of the femoral head after removal showed that the tuberculosis was invading its upper half, that which had been in contact with the sequestrum in the lip of the acetabulum.

HYDROCELE.

Dr. Dudley Tait exhibited a patient 79 years of age, on whom he had operated for hydrocele three months ago, and read a paper on the treatment of hydroceles. He said that the essentials of a radical cure are that it shall be devoid of danger and pain, prevent recurrences, and finally that it shall permit the patient to resume his ordinary business in the shortest possible time. He condemned the treatment by the injection of irritating fluids for the purpose of producing adhesive inflammation between the layers of the serosa, also Volkmann's operation of incision, followed by suture of the edges of the serosa to the skin, with or without drainage, as being very uncertain in their results. In twelve of his cases operated by the latter method, he noted relapse in two, and called attention to the fact that German authors acknowledged twelve to fifteen per cent of recurrences after Volkmann's operation. Partial excision of the parietal tunica vaginalis had also proven useless. His choice of operation is that of inversion or eversion of the tunica vaginalis, by which an incision is made down to fibro-serous layer; the tumor, still unopened, is then dissected by means of gauze, or the finger, until the mass is free from the cellular layer, especially posteriorly. A long incision is then made in the sac, from which the liquid escapes. The tunica is then turned inside out, placing the endothelial surface outward, and securing the cut edges of the serosa as high as possible around the cord by means of two or three catgut sutures. The testicle is then replaced in its normal position. It is covered by the skin, dartos, and cellular tissue. Suture of the skin, without drainage, completes the operation, which requires generally from five to ten minutes. He did not claim, however, the slightest priority for this measure, inasmuch as Longuet published a description recently, and stated having treated twenty-two cases by this plan, the majority as early as 1898. Among the objections made to the method of inverting the tunica vaginalis, were the risk of injuring the cord, fixation of, and subsequent atrophy of the testicle, and the possibility of relapse. All these points have been refuted by the experience of Longuet, who had not found a single instance of recurrence in his list of twenty-two cases. Doctor Tait's personal observations comprised two cases, one of which was the patient exhibited at this meeting, in which an examination of the patient at this time, three months after operation, showed the scrotal tissues freely movable over the surface of the testis.

Doctor Thomas, of Spokane, by invitation, said that he could not quite see the advantage of the operation described by Doctor Tait over the one he usually performed, which is that of excising the tunica vaginalis. He believed that every clean surgeon is convinced that the open method is the right one. The diagnosis is not always easy, but is always cleared up by the incision method, which he thought was the proper one. In any form of closed treatment there is a danger of sepsis until the wound is healed.

Dr. W. I. Terry said that the method seemed to him irrational. He did not see the object of doubling up a mass of tunica, and fastening it up to the cord. He wanted to inquire if the inverted tunica underwent atrophy.

Doctor Tait replied that it did.

NEPHRECTOMY.

Doctor Tait also reported a case of nephrectomy in a patient aged sixty-two years. The trouble began eighteen months ago, with polyuria and pollakiuria. Diabetes was then diagnosed, and a rigid diet enforced, causing a loss of sixty-two pounds. Four months later there was painful micturition and slight pyuria. Occasionally some loin tire on the right side. He was treated for cystitis by various physicians for fourteen months with no benefit. Examination in the beginning of November, 1900, showed an adherent, painful mass in the region of the right kidney, pus in large quantity in the urine, albumin, a few red corpuscles, numerous pelvic and a few vesical cells. The segregator (Harris) gave a decidedly purulent urine from the right side, and almost clear urine from the left. The amount from the left side was almost double that from the right side. Temperature at this time was almost invariably 37.2° in the morning, 39° at night; pulse from 70 to 80. Diagnosis pyelonephritis, possibly tuberculous, with a mild cystitis, descending variety. Lumbar incision, November 14, showed an extremely adherent kidney. With considerable difficulty and some hemorrhage the lower three-fourths of the kidney were freed. During this dissection two pockets of pus were opened in the lower third of the kidney. Further dissection being apparently impossible, clamps were applied, and morcellation done. The wound was left open. The patient's condition immediately after the operation was very satisfactory; pulse 96, temperature 38°. The dressing was removed on the third day; the wound had then the aspect seen when clamps are used. Healthy granulations were not noted on the surface of the entire cavity until the fifteenth day. The patient had no control of micturition; it was, however, no longer painful. The daily amount of urine passed could not, therefore, be estimated accurately. It varied between 900 and 1,300 grams. It contained a small amount of pus in the beginning, and became almost clear during the second week. On the 17th day the urine contained a few leucocytes, albumin, and a few vesical, but no pelvic cells. The pulse showed a marked increase as early as the fourth day (104), and rose gradually subsequently. The treatment was salt water subcutaneously, cardiac stimulants, and diuretin milk. On the 20th day the condition of the wound was entirely satisfactory. The granulations were present in all directions. The pulse remained high,—118 to 120. Temperature at night 38.4°. Urine clearer and more abundant. Without apparent cause a sudden change occurred during the day, pulse 134, irregular, temperature 38°. Urine greatly diminished in quantity. Notwithstanding the use of stimulants and salt solution the pulse increased in frequency, 180, and more intermittent. The patient died twelve hours later, the 20th day after operation. There were at least three points worthy of discussion in this case: (1) The mistake in diagnosis made by those who saw and treated the patient during the eighteen months preceding the operation. Failure to make the usual examination of the urine and urinary system is the only possible explanation. (2) Whether in the presence of multiple purulent foci in the kidney, it is safer to be contented with a nephrotomy and drainage. The French school almost unanimously advises incision and drainage in the common nodular infiltration of the kidney. In the case under discussion the kidney was very friable, extremely adherent in the upper third, and two pockets of pus had already ruptured during the dissection. Nephrotomy under these circumstances would have been very easily done, but the symptoms would probably not have cleared up with such incomplete drainage. However the question still remains, Would nephrotomy, with or without secondary nephrectomy, have given a better result? (3) The condition and function of the remaining kidney. The doctor confessed to have neglected the proper study of the case from this all-important point of view. He failed to utilize any of the recent methods of determining the function of the kidneys. Neither the methylene blue test, the phloridzin test for artificial glycosuria, nor cryoscopy, were resorted to.

Dr. Philip King Brown exhibited the kidney removed by Doctor Tait, and also sections of it prepared for microscopic examination.

ITEMS.

Dr. L. Newmark has removed his office to 590 Sutter St., northeast corner Mason, telephone number, Front 57, hours 2 to 4.

Dr. Henry J. Barbat has removed his office to 590 Sutter St. Office hours: 1 to 4.

Dr. H. A. L. Ryfkogel has removed his office from Oakland, and established a laboratory in the Merritt Building, 590 Sutter Street, and will devote his entire time to laboratory diagnosis, bacteriology, and medico-legal microscopy. Hours: 9 to 11 A. M.

Dr. F. B. Carpenter has removed his office to 590 Sutter Street.

Dr. G. H. Evans has removed his office to 590 Sutter Street.

Dr H. B. Graham has removed his office to 590 Sutter Street.

Dr. B. MacMonogle has removed his office to 590 Sutter Street.

Dr. Albert Abrams has removed his office and residence to the southwest corner of Van Ness Avenue and California Street. Entrance to office on California Street. Hours, 1 to 4 P. M.

Dr. J. C. Spencer has removed his office to 590 Sutter Street.

Dr. F. B. Eaton has removed his office to 590 Sutter Street, northeast corner Mason Street.